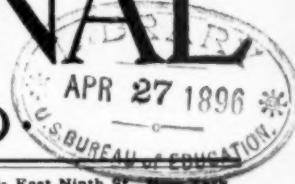


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For the Week Ending April 25.

No. 17

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Heart and Brain.

By N. O. McANDREW.

(CONCLUDED.)

II. A second reason why we are weak in professional skill and knowledge is because we fail to realize the difference between special and general knowledge. We try to persuade ourselves that travel or the theater or literature, or rest in the country, or some other beneficial thing will best fit us for good work. We fail to realize that these are no more than any cultivated person would want, irrespective of his profession. A teacher is more than a man of culture. He is a person with a decided love for youth, and with a special intelligence to guide that love.

A shipbuilder might be a member of the Royal Geographical Society, and thus know a great deal about a ship and about the sea; but you want more than that in the man that sails your vessel; you want an expert navigator. For a teacher of your children, you want a well cultivated man, of course, but you want him truly and purely to love your children and to have especial skill in teaching them.

III. The third reason why teachers do not perfect their professional skill is because they do not intend to make teaching a profession. They drift in and would like to be in something else. At every possible opportunity they banish their business from their minds. They wince when a new acquaintance asks them their employment. In summer they desire to pose as persons of elegant leisure. They are school men not because they want to be, but because they happen to be. I don't know any cure for this complaint except death or another calling. If the man does not love his work and cannot bring himself to love it he is hopeless; he mars more than he makes.

IV. The commonest reason of all why teachers do not grow more skilful, is because they do not feel like any more intellectual labor. Appearances often indicate that this may be a valid excuse. The typical teacher looks tired, he is "busy and bothered," his nervous force seems almost exhausted. It is often said that no other calling exhausts the worker so quickly. The inevitable recurrence of classes, whether one feels like meeting them or not; the necessity of strict attention; the drain made by the maintenance of enthusiasm, require a great deal of vitality. A merchant may go to an evening party and if not feeling wide awake the next day may defer certain tasks to a more opportune time. Not so the teacher. As regularly as the clock strikes, will appear the score of uneasy pupils, often indifferent, sometimes covertly or openly rebellious; always independent intelligences requiring mastery by the teacher's will. This is exhausting; this seems to sap the vitality so effectually that by three o'clock the teacher is ready to drop to the floor in a limp condition. No ardent desire for study is possible under such conditions. One might in the weariness of the moment feel justified in saying that an overworked profession like this could not undertake to do another thing.

Could we call to the stand representatives of certain other professions we might have much the same story. A lawyer must be ready for his case at the day and hour

appointed, and he must be keyed to the pitch where his best powers of shrewdness, persuasion, and self-possession are involved. This costs nervous force. A lawyer has as hard a position as a teacher. A clergyman's Sunday services and week-night meetings come with unfailing regularity. He cannot escape them. A church full of independent beings whose minds he must guide, costs the minister a drain of nervous force. Visitations of the sick, funerals, weddings, etc., always something more to be done, make the pastor's lot fully as hard as the schoolmaster's. So is it with an editor, so is it with a broker, so is it with a physician. Success costs a precious sum of blood and nerve and brain.

The answer to this objection is in the one word *systematize*. Every professional man is forced into system. System is nothing but planning. Planning is nothing but making the calm thought of leisure do service in the bustle of action. System is a device for crystallizing the best way to do a thing with a formula, before one has forgotten the way. System is an invention to prevent thinking out or discovering the same good thing more than once. System is the operation of pushing into the back of the brain operations consisting largely of repetition, and leaving the front of the brain free for higher thought. Intellectual work yields to crowding and improves by it. Lessons should be prepared watch in hand. Records should be posted regularly and quickly.

Above all, when a thing can be done at once it should never be set aside for something more congenial. *Do it now* is the motto that explains many a man's noted capacity for work. Purchase filing devices, take memoranda in a book instead of on loose paper, and in every way try to see to it that repeated and detail work is done by your mind acting as a machine, and you will find yourself fresher for study than ever before. You have the most abundant time of all the professions, except perhaps, some of the ministry. The most of a teacher's working time he is able to adjust when he pleases and where he pleases. The average amount of fixed service for teachers is about four and a half hours a day for 115 days out of the 365. All the rest of the time he may manage as he wishes, selecting his working hours and places so as to save himself from interruption. A great part of the break-down of teachers comes from their own unintelligent lack of self-management. We do not inform ourselves as to our duties, we never know what constitutes a full day's work, or a full week's work. We have no power of deciding on what is an immediate, and what a more remote requirement. We are in a profession requiring system, and either we are all system or helplessly erratic. Business men laugh at us. Bankers know us by the helplessness of our manner at the cashier's window; and public-spirited citizens address our conventions with a benevolent air of condescension, or of fulsome eulogy, so that we have come to regard ourselves as a devoted band that have renounced the pleasures of this world for a life of sacrifice. This seems to me a very third-rate position to occupy. Instead of all this pity for what we endure, it strikes me we should be in a better place if we should merit praise for what we do. This state of affairs will come about, I venture to predict, when we learn that we must love our calling so well as to keep ourselves constantly alive to perfecting ourselves in it. It is time for us to find out what the brightest minds have contributed to the basic science of our art; time to stop putting an interrogation point at the end of every topic we discuss at teachers' meetings; time to stop whining; time to read, and to study, and to grow.

Pratt Institute, Brooklyn, N. Y.

April 25, 1896

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Let the teacher explain that there is a belt called the Zodiac in the heavens, that this is divided into twelve parts and that these parts are called signs and that the names of these are Aries, Taurus, etc. By pointing out to a few of the older pupils some fine evening the location of such of the signs as are visible, they will easily learn them; the other pupils will be told and thus the names acquired by the whole school.

Next let him tell them that certain of the stars move about in the Zodiac among the signs—these are *planets* (wandering stars); the names of these are Mercury, Venus, Mars, Jupiter, Saturn, Uranus, and Neptune.

The moon being the most conspicuous object in the heavens can be watched by the smallest child. The moon moves through the signs of the Zodiac each month. On the 4th of May it is "last quarter," on the 12th, "new;" 20th, "first quarter;" 26th, "full." The moon passes by all the planets during her round in May; on the 7th, she passes near (conjunctions) with Mars; on the 11th, with Venus; on the 14th, with Mercury and Neptune; on the 17th, with Jupiter; 25th, with Saturn and Uranus.

By watching the moon at these dates the position of the planets will be known. For example, on the 7th, the moon is near Mars; 11th, Venus; 14th, Mercury and Neptune; (the latter is not seen without a telescope); 17th, Jupiter; 25th, Saturn and Uranus (the latter usually needs a telescope to be seen).

In May, Venus is in Pisces, Mars in Aquarius, Jupiter in Cancer, Saturn and Uranus in Libra.

It is too often the case that children walk beneath "the glorious arch" for twenty years and have no idea of the wonderful things going on there. This is wrong. It takes but a few minutes to ask on the 4th, what takes place to-day in the heavens? A pupil will say, "The moon passes into last quarter." On the 7th to the same question a pupil will reply, "The moon conjunctions with Mars." All may not understand this, but they will inquire; one that does understand will be glad to show his knowledge in explaining.

Again he will ask, What signs of the Zodiac are visible to-night? Who can tell all the signs? etc. Questions like these, one or two per day, will set them to observing and questioning, and this is all that is needed.

Diet for School Children.*

By LOUISE E. HOGAN.

Yeo emphasizes the period of school-life as one of the most critical and important epochs in the life of children as regards adequate nutrition. He says that at this period there is not only continuous growth and development, but remarkable activity, which demands a complete and liberal dietary. Teachers in boarding-schools are apt to overlook this fact, and parents, as a rule, know little of the necessity for additional care at this time, with the result only too often of the foundation being laid for future disease, or of the undermining of strength that should be held in reserve for later life. Both body and mind are undergoing rapid development at this time, and the greatest care should be exercised. The food must be abundant, and must contain sufficient proteids, starches, sugars, and inorganic salts to meet the constant demand for these constituents of a perfect food. It must be remembered that this is a period when digestion and assimilation are active. It is a frequent custom among mothers of growing boys and girls going to school to jest about their immense appetites, and not only to jest, but actually to limit supplies of certain foods especially needed at this period.

The custom of sending children to school upon a light breakfast or none at all, with a cold luncheon for the noon meal, is reprehensible to the last degree. Or, if a hot dinner is provided, the habit of rushing home at noon in a limited time to consume eagerly and rapidly

(Part of chapter from advance sheets of a new book on "How to Feed Children," by Mrs. Louise E. Hogan.)*

the food which should be eaten leisurely and enjoyed, has a strong influence upon the integrity of the child's health, and it should not be allowed under any circumstances. If school laws are rigid, remember that parental authority should be absolute, and insist upon different hours; or, if nothing better can be done, keep the child away for the time required, irrespective of landmarks, etc. Such action, if concerted, would speedily bring authorities to the point of meeting existing needs in this direction.

Do not forget that there is a lifetime for study and only part of one during which the physical building up process can be regulated.

To sum up the rules laid down by Yeo, Dukes, Thompson, and others, the foods required during this period are as follows: Well-made whole-meal bread; as much butter as it desired; an abundant supply of milk all through adolescence; starches, and sugars, should be freely supplied (giving heat and force); meat twice a day; fish for delicate feeders; green vegetables in abundance, either alone or in vegetable soups (to prevent eczema); suppers should be light, not stimulating; the craving for sweets should be satisfied with moderation and wisdom in selection; a free use of salads should be made; all cooking should be carefully looked after, and food should be made savory and appetizing; in fact, the rules given by dietists for early life should be carried out through the entire period of childhood to adult life, and, indeed, many of the suggestions may be followed with benefit even then.

The Most Common Fault in Reading.

By CAROLINE B. LEROW.

Certain faults universally characterize the reading of the average pupil. These are the omission, insertion, transposition, and repetition of words; stumbling upon words, as we call the futile attempts at utterance which cause the pupil to repeat the first syllable of the word; lack of distinct articulation; lack of pause, both grammatical and rhetorical; lack of inflection; lack of emphasis. No mention is made of incorrect pronunciation of words, as that may be wholly a matter of ignorance, and a mistake liable to be made even by a careful reader who encounters an unfamiliar word. Still it is true that a vast amount even of this sort of blundering could be prevented by slow reading, as a great deal of the trouble is caused less by ignorance than by haste.

In reading aloud the first and almost the only essential is that the eye shall keep ahead of the voice, anticipating not only the words and their pronunciation but the sense, in order to secure the necessary pauses, emphasis, and inflection. Haste wholly prevents this advance action of the eye. The voice sometimes falls upon a word before the eye has fully seen it—in the sense of allowing time for the meaning to be communicated to the brain—and all other blunders naturally follow.

Nothing is more common than breathlessness in reading. The lungs are imperfectly supplied with air essential for the production of voice—caused by lack of proper pause for an opportunity of filling them. This lack of sufficient breath produces nervousness in the reader, and the nervousness reacting creates additional difficulty in breathing. Under these distressing conditions the only object of the reader is to finish as soon as possible, and to do this he of course hurries as much as possible—"and the last state of that" pupil "is worse than the first"—which is needless.

Nothing is harder for the teacher of reading than to secure proper inflection of the voice, even when the sense of the words is apparently understood. Here again the failure may in most cases be wholly attributed to haste, and very few, even among teachers, understand, or at least practically realize, the scientific reason underlying the fact. The explanation is based upon the physiology of the vocal organs.

Inflection is a matter of pitch. If the voice gives a falling slide upon a word the pitch of the voice is lower upon the end of the word than at the beginning. The

reverse is, of course, equally true. This change of pitch is due to a change in the position of the larynx, and consequent change in the rate of vibration of the vocal chords. This is as true of the strings of the throat as of those of the pianoforte. But time must be allowed for this change in the position of the larynx, and if haste prevents this it prevents equally of course the attainment of the result desired, whether it be the rising, falling, or circumflex slide.

By slow reading is not meant slow utterance of words, which would be wholly unnatural, but pauses between groups of words precisely as they are made in conversation when the speaker has a definite idea, and a genuine desire to communicate it.

It is a sad fact that there is no royal road to any kind of learning, and in this direction, as in all others, it is only by infinite patience, infinite drill, and almost infinite time, that any improvement can be brought about. The drill must be at first wholly mechanical, as thus :

Teacher.—Fill your lungs and read with your eye to the first pause. Notice before you begin what word is emphatic.

Pupil.—“Who, then, was this Caesar”—

Teacher.—Pause, take breath again, read to the end of the sentence before you read aloud.

Pupil.—“who stood upon the bank of the stream ?”

Teacher.—Fill your lungs. Read half of the next sentence. Think what it means. Notice what words are emphatic. Begin.

Pupil.—“A traitor, bringing war and pestilence—”

Teacher.—Fill again. Look over the rest of the sentence.

Pupil.—“into the heart of that peaceful and prosperous country.”

Teacher.—Fill your lungs. While you are doing it read the whole of the next sentence.

Pupil.—“No wonder that he paused.”

Teacher.—Fill your lungs. Look through half of the next sentence.

Pupil.—“No wonder if his imagination wrought upon by his conscience—”

Teacher.—Pause. Take breath. Look ahead. Go on.

Pupil.—“he had beheld blood instead of water, and heard groans instead of murmurs.”

And so on. And so on. And so on.

True, this is not reading any more than a scaffolding is a house, but it is the essential preparation for all intelligent reading which is the vocal expression of thought. There can be no assimilation of the thought except through allowing time for the eye to grasp the meaning of words. There can be no vocal expression of the thought except through allowing time for the muscles to act naturally and adequately.

In walking the eye anticipates the curbstone before the feet reach it, and the crossing is made safely. In vocal walking over a line of print instead of a block of pavement, if the eye can in the same way anticipate the advancement is accurate and satisfactory. Safety in both forms of progress depends upon foresight and care, both of which require a certain amount of time. It is the man who hurries who is most liable to stumble and fall.

And the drill specified, slow and tedious as it must be to teacher and to pupil alike, does inevitably result in improvement, and sometimes in a surprisingly short time. The pupil compelled to breathe, to notice, to think, constantly reminded to do these things, forms at last the habit of doing them. His intelligence awakes, he sees the connection between cause and effect; he comprehends the reason for things and after a while instinctively works in the right rather than in the wrong way.

The keynote of all instruction in the noble science of elocution is, Read slowly. The pity of it! that so much of this elementary and purely mechanical drill should be required among the advanced pupils of our grammar and high schools, because so greatly neglected in the lower grades.

Brooklyn, N. Y.

Spelling and Grammar.

From a lecture before the Brooklyn Ethical Association, by Nelson J. Gates, of the Brooklyn board of education.

The crying need of scientific reform is to be found in a branch of learning we call spelling. It is patent to all that nearly a fourth of the first ten years of school life is devoted to an attempt to learn to spell correctly, an attempt that is seldom more than half successful.

The number of words used in the English language has grown in the last fifty years from 65,000 to over 300,000. If the authority for the absurd combination of letters, say in twenty five per cent. of these words, had any justification in reason, the case would be different.

There can be no pretense of reward for the tax imposed on the memory in this long and weary study which ends in partial failure. It does not discipline the mind nor add one iota to the fund of acquired knowledge, for the memory is charged with ten thousand items of unrelated facts assumed without rule or reason. This much cannot be said of any other study presented to the human mind. It stands as the monumental crime against scientific thought and scientific reasoning. Neither philology nor etymology can justify such barbarity in the name of literature, nor such cruelty to human animals in the name of education. When the young applicant for an appointment at West Point has, by dint of coaching, run the gauntlet of an examination in spelling, he has conquered a more stubborn and more resourceful enemy than he is ever likely to meet in his military career. Spelling should be a science and not a mental torture.

Letters of the alphabet and words formed therefrom are neither things nor ideas, they are simply the symbols of ideas. They have, or ought to have, a fixed relation to the organs of speech which give them vocal expression, and letters that do not participate in this articulation should have no place in the word.

Thus spelling and pronunciation would be combined in one art, and would be mutually helpful in perfecting each. To retain the present system for etymological reasons is to pay in patient toil a thousand times its value, and science in the name of humanity enters a thousand protests and calls for the phonetic system, which, if adopted, would shorten the grammar school course more than a year. In short, the progressive and scientific spirit of the age demands that our complex orthography be referred to the vocal organs with power.

The proper and correct use of language is one of the essentials of education, and is second to no other branch in importance. Yet grammar, like spelling, has not yielded to scientific classification. If we are to judge from experience, it cannot be intelligently learned from any system of book instruction now in use. Every attempt to reduce grammar to a science by elaborate classification and arbitrary rules, has been a failure.

The reason is found in the fact that there is no intelligent relation between the different parts and the whole, the relation being an arbitrary one, resting on the authority of the best usage. It is a case in which analysis does not yield to synthesis, nor synthesis to analysis; they are not scientifically related.

Then how are we to learn to write and speak grammatically or according to the most approved usage? Of course no one will deny that a few brief rules (with their exceptions) may be useful, but they can be given by the teacher and require no book. We learn to speak and write correctly by speaking and writing—by repeated trials and failures, just as we learn to walk or talk. We learn to write and speak grammatically by persistent practice within the language, just as we learn to swim by going into the water, and we can acquire neither art in any other way. It is no more absurd to attempt to swim, by analyzing first the water and then our blood and muscles, than it is to teach grammar by learning the incomprehensible conjugations and tabulations of the so-called elements of grammatical structure. This is a weariness to the flesh and a chill to the true spirit of learning. It inspires truancy in boys and

April 25, 1896

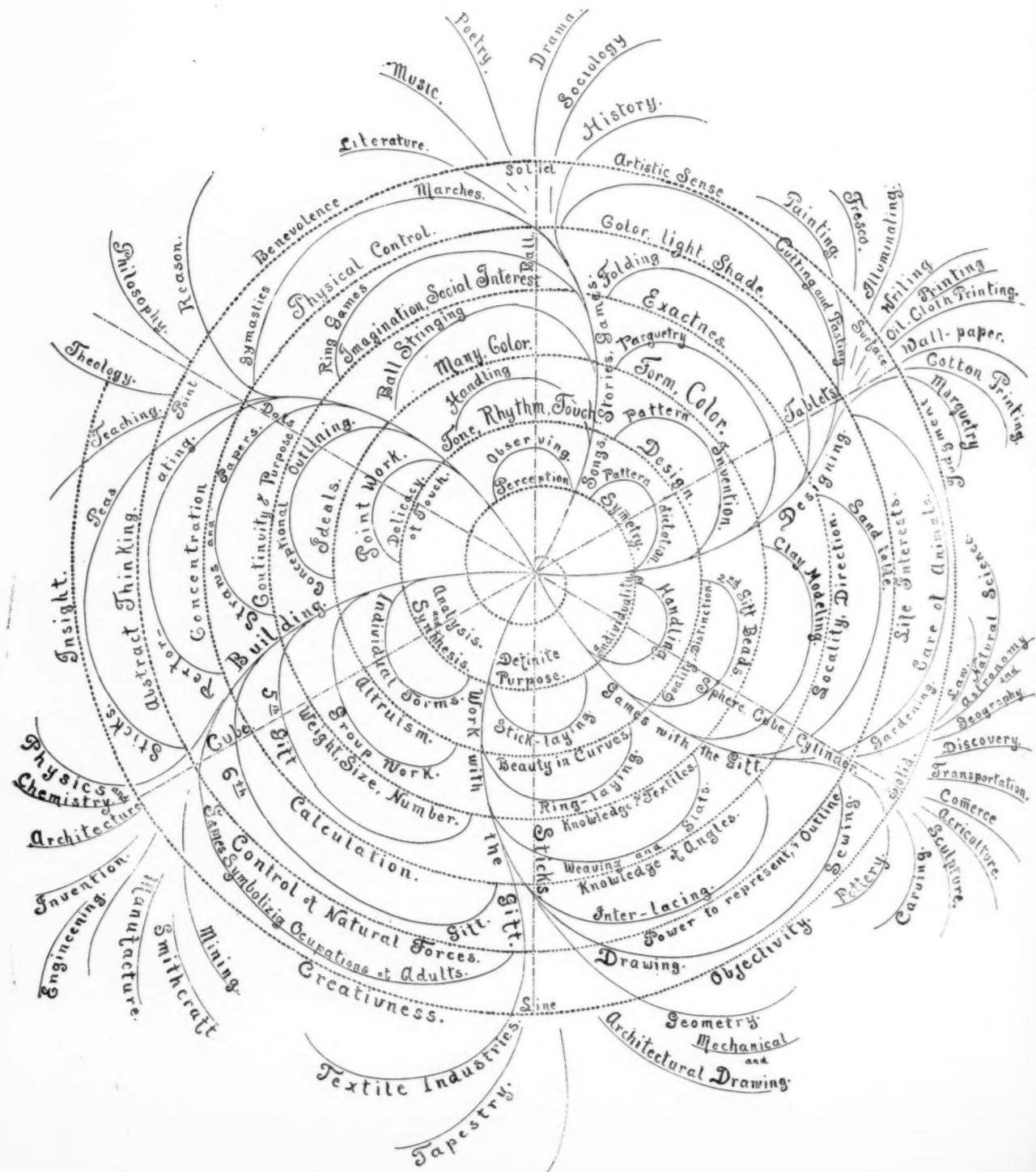
stupidity in girls. They both hunger for something they can understand. We learn good grammar as we learn good manners, by associating with people who use it. Grammar was never born, but, like Topsy, it simply grew. The fact is, the correct use of language is about the only good thing that is really contagious. It can be caught almost anywhere except in the school-room where the technical book is used. The book is an ef-

fective antiseptic. It must have been mentally vaccinated. The book should never be brought into the school, and teachers should handle it thoughtfully and prayerfully. Leave both the spirit and the letter of grammar to the spirit of observation, and you have removed a stumbling block from the pathway of the memory-burdened child and given him at least half a year for more important work.

Table Showing Relations of Kindergarten Occupations to the School and to Life Interests.

By MRS. EUDORA HAILMANN.

(SEE ARTICLE ON OPPOSITE PAGE.)



The Kindergarten Occupations.

By MRS. EUDORA HAILMANN

The more I become familiar with the kindergarten material in its intimate and all-sided relations to human development, from the earliest dawns of consciousness in infancy to the maturest achievements of industry and commerce and to the fondest aspirations of science and art—the more I realize these things, the more I esteem the genius that contrived this material and related it in organic parallelism with the needs of the child and man in the educational processes of self-revelation.

This organic relation I have symbolized in a synoptical table for the guidance of my students. In the table the orange spiral indicates the centrifugal development of the child from a condition of practically complete subjection to environment into self-active control of environment and into the spiritual freedom of an educated will.

The radial lines symbolize successively the balls of the first gift, the sphere, cube, and cylinder of the second gift, the dissected cubes of the third, fourth, fifth, and sixth gifts; the tablets, sticks, and dots. These so-called gifts constitute the mathematical framework about which the various kindergarten occupations cluster. They illustrate, at the same time, the first definite abstractions of surface, line, and point, which the play work with these gifts enables the child to make.

It will be noticed that in the arrangement of the radial lines these abstractions alternate with the rays of the solid gifts. This is done in order to adapt the symbolism of the table to the fact that the organic process of geometrical abstraction begins immediately with the presentation of the first gift, is intensified through the presentation of the second gift, and culminates during the play with the dissected cubes of the third gift.

With each radial line is associated an organic curve proceeding from the center and sending out branches which bend over to meet the spiral that represents the developing life of the child. Each of these curves with its branches represents the play and work of the child with the respective gift and with a variety of material more or less closely connected with the gift in character and purpose.

On the section of the spiral enclosed in the arc of each successive curving branch are indicated some of the main phases of soul development, stimulated by the respective occupation.

At the margin of the table these organic curves open out into the various industries, occupations, arts, life interests, and ideals of man.

Thus the organic curve associated with the ball implies in the play work of the child the use of ball games, songs, stories, and, in expanding succession, the observing and handling of the balls and related objects, ball stringing and ring games, stimulating in the child perception, developing ideas of color, number, touch, tone, rhythm; quickening and guiding imagination and social interest; establishing physical control and leading the child to tastes and interests which culminate in music, literature, history, and sociology, and lay the foundation of a life of devotion to duty.

The curves associated with the second gift—the sphere, cube, and cylinder—indicate games and work that imply the handling of the gift, the use of the second gift beads, clay modeling, the sand table, gardening, and the care of animals. These reveal to the child the fundamental facts of individuality and individual qualities, and lead him into the study of form, locality, and direction; teach him control of environment in the interests of life; reach forth into commerce, agriculture, and the plastic arts, into geography and natural science; establish judgment and the respect of law.

The constructive work introduced by the four gifts of the dissected cube is represented, successively, by the individual and group work with the third and fourth gifts, the advanced building with the fifth and sixth gifts and with games symbolizing the occupations of adult

life. It trains the child's power of analysis and synthesis, his skill in applying his knowledge of number and form in problems involving proportion and planning, gives him control of material and of natural forces, liberates his creative and inventive powers, adds to his purpose, strength and foresight. It naturally leads the child to the physical sciences, to architecture, and to the manufacturing and engineering arts.

Similarly, the influences associated with the work with the tablets in occupations that involve symmetrical designs by dictation or in free invention and, subsequently, in the work of parquetry, folding, cutting and pasting, and brush work, develop in the child the sense of symmetry, skill in designing, appreciation of form and color in harmonious relations, neatness, and accuracy. They lead to the establishment of artistic sense, and, in later life, to the arts of designing, inlaying, painting, and the like.

Stick and ring-laying, slat work, weaving, interlacing, linear drawing and embroidery give to the child's work definite purpose, enable him to appreciate the beauty of the living curve, fix him in habits of patience, perseverance, and conscientiousness. They open to him avenues that lead to geometry, to mechanical and architectural drawing, and to the textile industries.

Lastly, the work with the dots in conceptional outlining, as well as the work with the straws and papers, perforating, and sticks and peas, secure delicacy of touch, teach the child the first steps in the formation of ideals, impart to his purpose continuity, and to his work accuracy. They open to him the free fields of abstract thinking which is the key of insight and the tool of reason.

Between the kindergarten on the one hand, however, and the life interests, sciences, and arts of man on the other, lies the school. Common sense, which is the fountain-head of the new education of Froebel, demands that these interests, sciences, and arts should be reached on the roads on which the child has been started in the kindergarten. If the kindergarten is right in the selection of its roads, then the school must be wrong in the measure in which it deviates from them. On the other hand, if it could be shown that in order to reach those interests, sciences, arts, and inspirations the school is compelled to choose other roads, it would become necessary to conclude that the kindergarten was wrong.

In another chart, therefore, I propose to show that the same radial lines which run through this kindergarten chart, associated with additional curves of occupations and studies, growing more and more abstract and more conventional, but not on that account less organic, will lead the child steadily, surely, and luminously to these interests, sciences, arts, and aspirations, which should be the goal of both kindergarten and school.

Washington, D. C.



Regarding bench work in wood, it is necessary to distinguish between two systems now in general use. One is an American modification of the Swedish sloyd. The other the Russian system, likewise modified. In the Russian system, the exercises, for the most part, are unapplied. That is to say, they are not embodied in finished models. The pupil performs any certain exercise for the sake of the tool skill acquired. At its completion he has no finished product remaining as the result of his labor. The sloyd, on the contrary, holds it to be desirable that the pupil's effort shall have an appreciable outcome obvious to himself. Each exercise in the sloyd work, then, is embodied in some useful article. The younger the pupil, the more essential becomes this obvious value of the product. So that the Swedish system, in its Americanized form, seems peculiarly adapted to the elementary school, while an extension of it would not be out of place in the high school. The Russian system, in which the pupil works with a self-calculating purpose as distinguished from the spontaneity of the earlier work, is most serviceable at a later stage.

New Light on the Brain.

By S. MILLINGTON MILLER.

(CONTINUED.)

With equal rapidity a message flashes across the short intervening space to the hand center of motion and ever so much quicker than the wind the command flies down through neck and shoulder and arm to your hand, "drop that coal." It is done, and though your fingers tingle for some time, there has been no material destruction of your flesh.

By reference to the illustration these functions of the brain may be located. The broad, wavy black line running almost vertically represents the "fissure of Rolando," which is the great motor axis of the brain. It crosses all the various motor points of action in the brain. (Fig. 8B.)

It was by the vivisection of the brain of the monkey and the dog that the existence of these phenomena of the human brain were first suggested. By electric excitation of the exposed surface of the brain of these animals it was learned that touching a certain portion of brain tissue with the pole of the battery produced action in a well defined portion of the body. It was found that the motor centers in the human brain are almost identically the same as regards location as those in the brain of the dog and monkey.

It ought to be well-known, in view of all that has been said against vivisection, that animals thus operated upon are as tenderly adjusted and as carefully etherized as the millionaire's daughter under operation, and that just as much watchful care is exercised to mitigate suffering and to hasten the animal's recovery. And in the next place, operations upon the brain are almost absolutely painless.

SLEEP.

The endless activity of the sense centers and those of intellection during the waking hours gives rise to a natural weariness or exhaustion, and sleep comes on. In other words, sound sleep is a word employed to describe a universal condition of inactivity or inhibition in which all the centers of the brain participate. As the fibrillar connections of these various centers are simply conductors and not originators, they naturally participate in the same repose. The brain being composed, as already described, of an endless number of centers where various functions are performed, it naturally follows that sound and healthy sleep should affect all portions of the brain equally and this is the case.

Sleep, in a general sense, is the culmination of a daily rhythm. Specifically and properly it intervenes when the stimuli of sensations from the outer world cease.

Strümpell in his *Archives* relates the case of a boy whose one eye and one ear were his only avenues of communication with the outer world of sense. When the eye was covered with a bandage and the ear plugged with cotton he went to sleep with the regularity of a machine. But he awoke irrespective of the withdrawal of the bandage and the removal of the cotton. All of which goes to prove that sleep is a normal rhythm and that it ends with its proper period of brain and body cell-rejuvenation.

Hibernation in mammals is marked by the same slowing of all the vital processes as is present in sleep.

In birds this rhythm of sleep corresponds with the daily succession of darkness and light, and is so closely bound up with this solar periodicity that feathered creatures are put to sleep by artificial darkness, such as eclipses, etc., and are equally well awakened by false dawns.

In the case of beasts of prey the usual condition of affairs would appear to be so far modified that they sleep during the day and are most expressively wakeful and watchful at night. The necessity of securing their food at night has given rise to the unnatural habit of sleeping by day.

Locally, sleep is an intense expression of cell-weariness, or fatigue. The nuclei of the gray matter cells of the cortex become loaded with the waste and poisonous

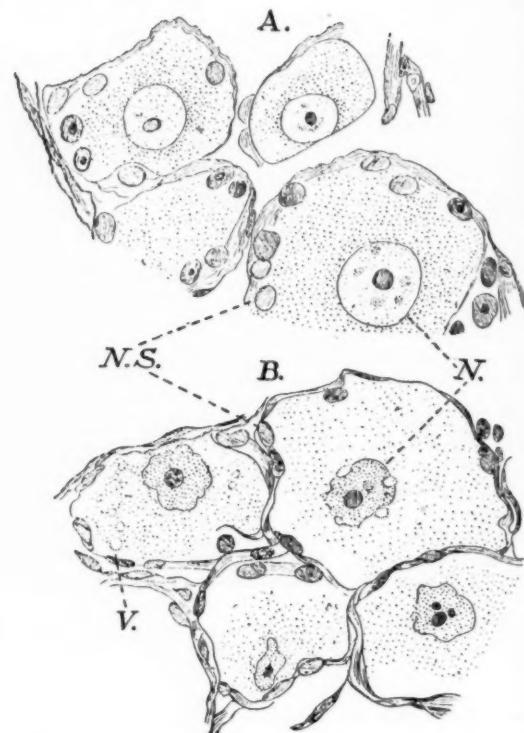


FIG. 9A.—Two sections, *A* and *B*, from the first thoracic spinal ganglion of a cat. *B* is from the ganglion which had been electrically stimulated through its nerve for five hours. *A*, from the corresponding resting ganglion. The shrinkage of the structures connected with the stimulated cells is the most marked general change. *N*, nucleus; *N.S.*, nucleus of the capsule; *V*, vacuole, $\times 500$ diameters. (Hodge.)

products of exercise and activity. And it is during normal sleep that they are refreshed and energized and again ready for the proper performance of their functions. (See Fig. 9A.)

The readiness with which awakening comes as a result of external stimuli is no criterion of the measure of this recuperative process in cells. For a slight external stimulus of sense will awaken the sleeper after two hours repose. Whereas at least four hours of sleep is needed for proper cell refreshment.

Mosso has been able to induce sleep (the symptom of fatigue), in a refreshed dog by injecting into its veins the blood of a tired dog. And Maggiori and Wedensky have shown by numerous experiments that fatigue is a poison similar to and of equal deadliness with *Curare* in which Indians dip their arrow heads.)

Professor Krohn, of the University of Illinois, finds that mental fatigue induces bodily fatigue and that school children have far less bodily muscular power after than before an annual examination. (See Appendix.)

Nerve and brain cells succumb to extreme fatigue much more reluctantly than muscle-cells. But when thoroughly under its influence the vital forces are far more rapidly disintegrated than by starvation.

DREAMS.

This expression merely indicates that while the sense centers are fatigued, or rather temporarily inhibited, the higher centers of intellection, though doubtless equally fatigued, are still carrying on an independent series of processes irrespective entirely of the outer world. This is, of course, an unhealthy phenomena of these higher centers, and dependent altogether upon some anomalous condition of things such as disturbance of the circulation or nutrition or something of the kind. As the will has its domicile in some of these centers its action, even in sleep, upon the motor centers gives rise to restless movements of the body or members.

(TO BE CONTINUED.)



A Kindergarten in Turkey.

By permission of the *Kindergarten News*.

Letters.

The Morning's Bible-Reading.

While the settlement of such questions as "Shall the Bible be used as a text-book?" is pending, its use in the morning exercises is one of the binding regulations in the majority of school manuals. One of these books lying before me states: "A portion of the Bible shall be read by each teacher at the beginning of the morning session, without question or comment."

Bound by the rule to read, and equally bound not to excite the interest or attention by questions or explanations, the average teacher opens the Bible mechanically to some "safe" passage and reads to a school whose "order" is perfect but whose thought is elsewhere. Again and again have I been in schools numbering forty or more, where, to all appearances, not one child listened to the reading. Such a use of the Scriptures is, on the face of it a failure—a failure to create spiritual feelings, a failure to teach ethical lessons and a failure to inculcate in the children a desire for greater Bible knowledge.

Now since the Bible *is* in the schools it devolves upon the individual teachers to see that its use is a success along these lines. The suggestions which follow can not possibly touch upon the creed of any teacher or pupil, and are offered only that the purpose of the morning Bible-reading may be accomplished.

With the gaining of interested attention as the immediate motive, let the teacher select each morning's passage beforehand, not that she may find the place quickly when the last sound of the bell comes, but that it may be suited to the age and experience of the pupils.

In a certain sixth grade where the teacher had aroused great interest in the study of Asia, the morning exercises were absolutely meaningless. Convinced that this fostered inattention to say nothing of greater evils, the teacher prepared for the next morning carefully.

When the time came she read briefly from Chronicles, Ezra, and Isaiah concerning Cyrus. At the word "Persia" the wandering or downcast eyes were fixed on the teacher, and throughout it was evident that minds were busy.

And thus we all might correlate our scripture texts with the geography or history subjects. For example the study of Egypt calls for the story of Joseph and of Moses, that of Greece for Paul's address to "Ye men of Athens." The pupils will soon no longer look upon the devotional time as one does the moments between his arrival at the station and the departure of his train!

Having developed an attitude of expectation in the pupils it is easy to go on giving—one day the story of Abraham's sublime faith, another the poetic description of old age as found in Ecclesiastes.

In one school recently, it happened in a reading period that the true distinction between prose and poetry was shown the children. The next morning two passages were read, one from Acts, one from Proverbs. The latter was read with particular reference to the meter. A little girl, perhaps eight years old, enthusiastically exclaimed, "Why, one of those is poetry and one's prose!" Another in the same class timidly said one morning, "Miss —, don't you think Daniel was a real brave boy?" Obedient to commands the teacher had made no comments, had asked for no opinions.

I could relate many similar instances equally pertinent, but these seem sufficient to prove the point—that careful preparation on the part of the teacher will create an earnest interest in the Bible reading. One class is in my mind now whose souls were stirred by the simple reverent reading of the first chapter of Joshua where the sentiment, "Only be thou strong and very courageous" occurs in substance several times.

Why may we not give each day some concept of truth, of unselfishness, of bravery? We owe more to our pupils than the thoughtless word-reading of which even the best of us have been guilty. Let there be a trial of these plans; their results will be far-reaching and good past finding out.

GRACE A. ROBARTS.
HEATH SCHOOL, Brookline, Mass.

Editorial Notes.

"Lead your pupils to self-reliance through self-activity in the service of the true, the beautiful, and the good." These words of the great Diesterweg need be recalled again and again. There are but few teachers who follow this principle throughout. Instead of having the children discover a truth or a new procedure themselves, or instead of letting them carry out some suitable enterprise without any help, things are simply jammed into them or are thought out and done for them. There is still altogether too much of leading-strings and too much uniforming. The children are not given enough room for self-development. No wonder that in many pupils there are to be found nothing but more or less strong impresses of the teacher; originality and individuality cannot develop under such a system. Only through self-activity can the pupil attain to self-reliance, and without self reliance there can be no character. Hence if you aim to form character incite your pupils to persistent self-activity. Get their minds and hands to work!

To judge from letters received in the past few weeks, quite a number of teachers will go abroad this year. Some will attend the summer schools in England and Scotland and later visit the continent for the study of pedagogics and psychology and the observation of educational practice. THE JOURNAL has been asked for suggestions as to where to go to derive the greatest benefit from such a tour of investigation. Only a few circulars of European summer schools for teachers have been received thus far and it is extremely hazardous to give reliable information relative to the attractions in this field. A note of the summer courses at Jena and Edinburgh, and an announcement of the international congress on psychology at Vienna has already been published in THE JOURNAL.

The question where to go for the study of theoretical and practical pedagogics will be briefly answered if correspondents will definitely state just what particular thing they wish to see or study. It will then be less trying to give a precise answer. The following brief suggestions may be of assistance to some of our interrogators:

The work of Dr. Isaac Sharpless on "English Education," together with the preface of Dr. Harris, is a fair answer to the question, "What is there to be learned in England?" The author says: "In no country has there been a more radical improvement in any score of years; while wise education, rigidly enforced, has held all that has been gained. There is much for Americans to learn, both to avoid and to copy, from this progress."

A number of correspondents would like to know whether to go to France or to Germany for the study of pedagogics. Generally speaking France is far behind Germany in matters pedagogical. One passage in a work by Mr. Henri Marion, one of the most eminent of French educationists, is significant in this connection. He advises French teachers not to address their questions to individual pupils, but to the whole class, and greatly praises the practice he found in German schools. His surprise at the superiority of the German schoolmaster in this matter strikes one as about as funny as would the joy of a man who, for the first time in his

life, hears an axiom of whose existence he was not aware. In France, drill in school exercises has been highly developed, more highly probably than anywhere else: in fact, the French teachers can truthfully say: "*Nous avons mécanisé l'éducation*" Educational practice there has been over-regulated, smacks too much of clock-work. The sharp eye of a student thoroughly trained in philosophic pedagogics will detect many clever devices that might be transferred with advantage to our shores. But one who wishes to see independent application of well-digested foundation principles, one who wishes to observe truly artistic work, will have to search pretty closely to discover it. There are some things, however, which the French pedagogy of the present has reasons to be proud of. These will be mentioned in a later number. As to Germany, no student of comparative pedagogics should fail to read Dr. Seeley's new book on "The German School System." There most of the questions relating to the status of theoretical and practical pedagogics are fully answered.

What has been said here of France and Germany is, of course, to be taken only as a most general answer to questions that have come to us. Any discussions of the topics touched upon are welcome. The "Letters" columns of THE JOURNAL are open for free exchange of opinions to all who have something of value to offer.

The Buffalo Meeting.

The plans for the great annual gathering of the National Educational Association at Buffalo are being rapidly shaped. THE JOURNAL will give early information so that every one who thinks of attending can make up his mind definitely. We do not intend here to speak of the wisdom of selecting Buffalo as the place of meeting; in many ways it is an ideal place; it has advantages over many cities in facilities of approach and in its abundance of hotels.

The aim should be to make it a large meeting; this part is what Buffalo must do, and if it does not it will be held to a strict account.

First, there is no small honor attached to this annual gathering; it brings together a body of the most highly educated people in the nation. It is a far more honorable body than those which will assemble to scramble and shout over the nominations for the next occupancy of the White House. Of this honor Buffalo is probably duly sensible.

Second, the 20,000 who will assemble will spend not less than \$500,000 in the hotels, stores, and cars of the city; it is probable this expenditure will reach to \$1,000,000.

Now what Buffalo is going to do on her side is a matter of keen expectation. We suggest:

1. She should offer halls and offices free for the use of the association.
2. She should plan to have a good many excursions at low rates.
3. She should offer low rates at her hotels and boarding-houses.
4. She should encourage the exhibition of educational materials and appliances, offering halls free or at merely nominal expense.

To have \$1,000,000 poured into her coffers, the hotels, boarding-houses, stores, etc., can well afford to raise by subscription whatever sum may be needed by an execu-

tive committee of her citizens to do the needful thing in the way of welcoming and entertaining the coming guests. Not to spend considerable money through the educational journals to tell the teacher of the attentions that await them in Buffalo will be a penny-saving operation.

Especially should she encourage publishers to make an exhibit of educational materials; Buffalo should put every facility at their disposal. Publishers of school and educational books often feel that they live only to be fleeced, when such meetings are held.

Let Buffalo determine to do everything possible to aid those who are aiming to render this meeting attractive, and let her not ask, "What is this worth to me?"

These points are respectfully submitted to the Executive Committee of Buffalo. Denver made woeful mistakes (?) that will not easily be forgotten. Buffalo can easily avoid them.

The Horace Mann Centennial will be a great affair, and all teachers in and around New York should not fail to take part. The exercises will be held in the hall of the Normal College at 8 P. M. May 4. Addresses of welcome will be given by Mayor Strong and President Maclay, of the Board of Education. The speakers of the evening will be Dr. W. T. Harris, Dr. G. Stanley Hall, State Superintendent Skinner and President Backus, of Packer Institute. Music will be furnished by the Normal College Glee Club, and the C. C. N. Y. Glee Club. Tickets may be obtained by application at the Normal College.

Leading Events of the Week.

It is reported that the majority of the delegates to the Chicago (Democratic) convention may be pledged to the free coinage of silver.—Maceo drives one of the crack Spanish battalions to the coast.—The Marquis Yamagata visits Grant's tomb.—Bulawayo is said to be surrounded; a large force of troops will be required to put down the Matabele and restore order.—It is said that Premier Bowell, of Canada, will soon retire and be succeeded by Sir Charles Tupper.—The attempt of a syndicate to get one hundred acres of Central park, N. Y., arouses indignation.—The promoters of the Cape Town exhibition hope that Americans will assist in it.—The Greater New York bill has again passed both branches of the legislature.—Gov. Morton signs the bill compelling railroads to carry bicycles free as baggage.

Note.

The interesting article by Miss Mabel Ellery Adams on "Arithmetic: A Memory" will be concluded in THE JOURNAL next week.

Austin Abbott, LL.D., dean of the faculty of the University of the City of New York, died this week. He was ill about ten weeks principally with a disease of the kidneys.

Dr. Abbott was born in Boston on Dec. 18, 1831. He was the second son of Jacob Abbott, the educator and author, and nephew of John Stephens Cabot Abbott, the historian. He was brother of Benjamin Abbott, writer on law; of the Rev. Dr. Lyman Abbott, pastor of Plymouth Church, and of the Rev. Dr. Edward Abbott, editor of the *Literary World*, of Cambridge, Mass. Dr. Abbott was graduated at the University of the City of New York in the class of '51. He was admitted to the bar in the following year and entered into partnership with his elder brother, Benjamin, and co-operated with him in preparing legal compilations of great value to the profession. As joint author with his brothers Lyman and Benjamin he wrote two novels, "Cone-Cut Corners" and "Matthew Caraby." With Benjamin also he began the publication of "Abbott's Digest" and "Abbott's Forms." He was the author of a series of books on the Methods of Civil Procedure adopted as statute text-books for use in all parts of the country. He received the degree of LL.D. from the University of the City of New York in 1886. In 1891 he was called to the University Law school, where he had the chair of pleading equity and evidence. He was of counsel for the prosecution in the Guiteau case.

Training School Requirements.

ALBANY, N. Y.—State Supt. Chas. R. Skinner has just prescribed regulations to govern teachers' training schools and classes. The law requires, as THE JOURNAL explained sometime ago, that beginning in 1897 teachers must present diplomas of training schools approved by the state department.

Candidates for such a class must be at least 17 years of age at the time of entrance. Before admission they must hold as a minimum qualification a diploma of graduation from a high school or an academy having a course of study approved by the state superintendent, or a diploma from an institution of equal or higher rank approved by the same authority as provided under the law. Additional qualifications may be prescribed by boards of education.

The school year is divided into two terms, but no school year shall consist of more than forty weeks. The compensation allowed institutions for the instruction will be at the rate of \$1 for each week's instruction for each member. At least four hours every school day must be occupied in study, or in instruction on the topics laid down in the course of study, or in the observation of model teaching, or in practice work.

The course of study designed is intended as a minimum to meet the requirements of the law. The subjects designated shall be completed in not less than 450 hours. The number of hours to be devoted to each subject shall be determined by the local superintendent of schools. The number of hours placed opposite the several subjects is to be regarded as suggestive only and as indicative of their relative value. The minimum course of study in teachers' training schools or classes in cities is as follows:

Psychology and principles of education, 90 hours; history of education, 30 hours; school management, 20 hours; methods in mathematics, 40 hours; nature study and psychology and hygiene, 40 hours; reading, spelling, and phonics, 30 hours; language, composition, and grammar, 40 hours; geography, 30 hours; form study and drawing, 40 hours; history, civics, and school law, 30 hours; physical culture with methods, 40 hours; music, 20 hours.

The department of public instruction will, on application of the local superintendent of schools, furnish special examinations in the several subjects prescribed in the course of study, in order that the members of the training school or class may become eligible to appointment to schools in this state other than of their own city. Such examinations shall begin on the third Thursday of January and on the second Wednesday of June.

Members of training schools or classes who attain a standing of 75 per cent. in the several subjects in which they are examined will receive a training class certificate.

University Extension in Germany.

Dr. Ernst Riess, of Baltimore, in an interesting article in *The Citizen* on "University Extension in Hamburg," shows that the free city of Hamburg has for a number of years provided means of culture for even its poorest inhabitants. In 1882 the "Akademisches Gymnasium," an institution which was founded to serve as an intermediary between school and university, was abolished by law. Then the rulers of Hamburg resolved to use the laboratories and collections belonging to it, in connection with other educational institutions of the state, toward spreading culture and knowledge among the people of Hamburg and the neighboring cities. A bill ordained that the directors of the botanical gardens, the observatory, the museums of decorative arts and natural history, and of the chemical and physical laboratories and the picture gallery, should be obliged to give public and private lectures. The sum of 12,000 marks (\$3,000) was set aside annually for lectures on history, philosophy, literature, linguistics, political economy, mathematics, meteorology, etc. These lectures are open to all adults, and no admission fee is charged. For the private courses the small fee of \$1.25 per term may be charged for one hour's instruction weekly. As there are two terms, the price of tuition for two hours a week for one year would cost \$5.00. Even this modest sum is rarely exacted. Practice in laboratory work costs from \$25 to \$41 per year.

While this plan is arranged to meet the wants of those wishing to gain knowledge and culture, special courses are provided for teachers who wish to fit themselves for an examination which shall qualify them to teach in schools of a higher grade.

Lately theology, foreign literature, and music have been added to the list of subjects. A general outline of a three years' course has been made, in which each lecturer will give a survey of his special field in a series of courses which cover six terms.

Mr. Riess, does not have official data as to attendance, but he has been privately informed that a large proportion of the attendance is made up of school teachers. The course on Dickens had 98 students, and lectures on modern history in 1884 drew together an audience of two hundred. These lectures says Dr. Riess, exercise a beneficent influence toward elevating mind, a thing very much needed in a city whose commercial interests predominate as largely as they do in the commercial center of the European continent. For one field, at least, that of decorative

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art, a visible proof exists in the revival of these handicrafts among the tradesmen of Hamburg, and the increasing demand for a really artistic decoration of interiors among all classes of the population.

New York's Arbor Day.

ALBANY, N. Y.—Arbor day will be observed throughout the state on May 8. It was established in this state in 1888 by statutory enactment which reads as follows:

SECTION 1. The Friday following the first day of May in each year shall hereafter be known throughout this state as Arbor day.

§ 2. It shall be the duty of the authorities of every public school in this state, to assemble the scholars in their charge on that day in the school building, or elsewhere, as they may deem proper, and to provide for and conduct, under the general supervision of the city superintendent and the school commissioner, or other chief officers having the general oversight of the public schools in each city or district, such exercises as shall tend to encourage the planting, protection, and preservation of trees and shrubs, and an acquaintance with the best methods to be adopted to accomplish such results.

§ 3. The state superintendent of public instruction shall have power to prescribe from time to time, in writing, a course of exercises and instruction in the subject hereinbefore mentioned, which shall be adopted and observed by the public school authorities on Arbor day, and upon receipt of copies of such course, sufficient in number to supply all the schools under their supervision, the school commissioner or city superintendent aforesaid, shall promptly provide each of the schools under his or their charge with a copy and cause it to be adopted and observed.

§ 4. This act shall take effect immediately.

State Supt Skinner has issued an "Arbor Day Annual," that will be highly valued by the teachers of the state. It contains letters from Governor Levi P. Morton and Hon. J. Sterling Morton, the founder of Arbor day, suggestions for programs, specimen programs, recitations and songs appropriate for Arbor day programs, etc.

TO HONOR HORACE MANN.

Dr. Skinner refers in this "Annual" also to the Horace Mann Centennial. He says :

Public attention is invited to the fact that May 4, 1896, will be the one-hundredth anniversary of the birth of Horace Mann, whose life was unselfishly devoted to educational work. He was a friend of the common schools and a promoter of public education. His name is an inspiration to all who love the schools. It is recommended that this anniversary be given public recognition in all the schools of the state by such appropriate exercises as may be arranged. Certainly every school-house should display the national flag on that day in honor of Horace Mann.

SUGGESTIONS FOR PROGRAMS.

The following suggestions as to programs and planting of trees are given :

1. Make programs long enough to admit of pleasurable variety; but not too long lest interest in the exercises may flag.
2. Have as many children as possible from the different grades to take part in the exercises.
3. Have a place in the program for an essay or talk on the beauty, utility, and peculiar habits of the trees to be planted.
4. Interest the patrons of the schools in attending the Arbor day exercises, and encourage the children to plant trees, vines, or shrubs at their homes.
5. Have short talks by some of the school officers or other prominent residents of the district.
6. Give especial attention to the committing to memory by the children of selections on nature and patriotism.
7. Have children learn for that day some one of our national songs.
8. Do not plant trees too near the school building.
9. Have holes for trees made large and partly filled with a good loan several days before Arbor day.
10. When planting trees use great care to see that none of the roots are doubled up.
11. When placing soil over the roots see that it is properly packed.
12. Appoint a committee of pupils to take charge of trees planted and to see that they are watered and cared for during the year.

Horace Mann Centennial.

The time of the institute of the principals and teachers of the public schools of Houston, Texas, to be held May 2, is to be devoted to a discussion of the life and educational services of Horace Mann, and to a brief review of the institute work of the current scholastic year. Supt. W. S. Sutton has issued a circular containing study-hints and material for preparation, from which we reprint the following :

1. Give a brief biographical sketch of Horace Mann.
2. Show that Horace Mann's experiences in his youth and his manhood illustrate the doctrine, "Whatever one soweth that shall he also reap."
3. Name four necessary qualifications for educational work and leadership possessed by Horace Mann.
4. Give a brief account of the controversy between Horace Mann and the thirty-one schoolmasters of Boston. What were the four points of criticism most strongly urged by the thirty-one against Mann? In the controversy who was right?
5. State five great results achieved by Horace Mann while he was secretary of the Massachusetts board of education.
6. Why did he abandon educational work for a time, and why did he not make his withdrawal permanent?
7. Tell something of his trials and his triumphs in Ohio.
8. What means did he employ to stimulate and educate public sentiment in Massachusetts? Could the same means be profitably employed now in Massachusetts and Texas?
9. One who knew Horace Mann well says: "The secret of Mr.

Mann's true greatness—and he was truly great—lay in that one thing, his *unselfishness*." Give some examples of Mann's unselfishness, and tell how the legislature of his native state in some degree rewarded him.

10. Discuss : Horace Mann's influence upon education in America and in Europe.

Horace Mann's spirit was receptive. His patriotism was never questioned, but it was of that exalted character that sought to improve the American school by the introduction of every wise and practical idea, no matter in what age or in what country the idea might have been born. He comprehended with remarkable clearness and fullness the fact that the principles of education do not depend upon soil or climate, upon latitude or longitude, but that they are the same in all lands and all ages. This accounts for his willingness to learn from the people of the Old World, and for the benefits he derived from visiting European schools, where he found some things he could commend and other things he could not endorse. Concerning the attentive and vigorous pupils in the schools of Scotland, he writes: "I do not exaggerate when I say that the most active and lively schools I have even seen in the United States must be regarded as dormitories, if compared with the fervid life of the Scotch schools; and by the side of theirs our pupils would seem to be hibernating animals just emerging from the torpid state. It is certainly within bounds to say that there were six times as many questions put and answers given in the same space of time as I ever heard put and given in any school in our own country." (When are the pupils of a class in a properly attentive state? Should they be either excited or indifferent?)

Of the Prussian and Saxon schools he wrote in his famous seventh annual report :

"On reviewing a period of six weeks, the greater part of which I spent in visiting schools in Prussia and in Saxony, entering the schools to hear the first recitation in the morning, and remaining until the last was completed at night, I call to mind three things about which I cannot be mistaken. I never saw a teacher hearing a lesson of any kind (excepting a reading or spelling lesson) with a book in his hand. I never saw a teacher sitting while hearing a recitation. Though I saw hundreds of schools, and tens of thousands of pupils, I never saw one child undergoing punishment or arraigned for misconduct. I never saw one child in tears from having been punished, or from fear of being punished. The teacher mingles with the class, having his whole library in his head, having prepared his questions beforehand. He asked them before naming the scholar who is to give the answer, so that all the children are alert; he adjusts them to the capacity of the pupil, encourages him and aids him in finding the answers, shames the one for his ignorance, congratulates the other for the correctness of his thought, maintains among all activity of mind and interest in study."

"With such preparation and such superiority, he exercises above all moral discipline; order is assured by the confidence and respect the children have for him, and, although he has theoretically the right to inflict corporal punishment, he has no need of resorting to it In Prussia and in Saxony, as well as in Scotland, the power of commanding and retaining the attention is held to be a sine qua non in a teacher's qualifications. If he has not talent, skill, vivacity, or resource of anecdote and wit sufficient to arouse and retain the attention of his pupils during the accustomed period of recitation, he is deemed to have mistaken his calling, and receives a significant hint to change his vocation."

At the end of his book, "The Work and Writings of Horace Mann," the Frenchman, M. J. Ganfres, makes this confession: "We must learn from this foreigner, what indeed our own history teaches, that a man is a power." Felix Pecaut, another Frenchman, adds: "It is indeed the impression left by the story of this noble life. Horace Mann undertook to realize the grand thought that Pestalozzi, a plain man, had conceived; to make of every child of the people a man, to construct the entire city with living stones. He succeeded as far as it is given to a single man to succeed. This skilled jurist, this statesman of positive views, this popular orator, became an apostle, became a practical educator; in him the citizen, the prophet, the schoolmaster were united."

In the last address he delivered Horace Mann disclosed the dominating, spiritual element of his character in these eloquent words: "I pant, I yearn, for another warfare in behalf of right in hostility to wrong, where, without furlough, and without going into winter quarters, I would enlist for another fifty years' campaign and fight it out for the glory of God and the welfare of men."

The American Medical Congress

Will convene at Atlanta, Ga., May 5th to 8th. This convention will be largely attended from the Eastern and New England states. The Southern Railway, "Piedmont Air Line," is the direct line from the East to Atlanta, making the trip from New York in less than 24 hours. Solid Pullman Vestibule Train of Dining and Sleeping Cars New York to Atlanta. The low rate of one and one-third fare for the round trip has been made for the occasion. For further information call on or address the Eastern Office of the Southern Railway, 271 Broadway.

Common School a Divine Inspiration.

PHILADELPHIA, PA.—At the last of his series of lectures on "Educational Methods," Col. Parker said:

"The ideal school is an ideal community, an embryonic democracy. A child enters such a school; he is a citizen to all intents and purposes; he is to adjust himself to an ideal state of society; he is to assist in the government of the school; he is to feel that he is a prominent factor in the work of the school, he is not there to get knowledge, but to learn to live. The social factor is the highest factor of all education, it dominates every other factor, even subject, method, and teacher."

"The rich and poor should be in the same school, for this is the only way in which the great question of labor and capital can be possibly solved. Children whose parents belong to all the religious sects should be educated together; there is no objection to any religion, but there is a profound objection to the segregation of children in classes. One of the worst features in our common schools in this country is the inclination of rich people to send their children to private schools. All nationalities should be in the same school, for this is the only way they can blend and melt into one society: which represents American liberty."

"No child can be educated at home for the simple reason he has little or no moral or religious work to do there. Children cannot be educated in private schools in the highest sense. Private schools have been a great necessity, but the public schools should be made so good, so efficient, that no parent should hesitate to send his children to them."

"The common school of the United States is the most divine institution on earth; it is the one place in which all children can practice from day to day a moral or religious life. Morality consists in planning what one can do for humanity—ethics in executing the plan. Order is the limitation of personal and community knowledge to educative work. Each little citizen should have a prominent part in deciding the best kind of order for executive work; in other words, the child should feel the necessity for order. The school is society shaping itself."

An Active Educational Club.

PHILADELPHIA, PA.—The meetings held during the winter at the normal school, under the auspices of the Educational Club, have been particularly successful.

The existence of this club is due to Dr. Brooks, the superintendent of schools, and Mr. Cliff, the principal of the normal school. As soon as Dr. Brooks assumed the superintendency he began to arouse the self-activity of the teachers, and to get them to realize the value of combination in effort. Four years ago the first meeting was held to consider the forming of an organization. A committee, of which Mr. Cliff was chairman, was appointed to study the work of similar organizations, and in May, 1892, the final organization of the Educational club was decided.

At first the membership was limited to men engaged in teaching or superintendence, but both men and women teachers engaged in public or private teaching are eligible to membership.

The topics discussed by the club are those which are timely, and of vital interest to the teacher. The topics of the winter have mainly been on psychology. Dr. Nicholas Murray Butler's talk on "Individualism in Education," was the last of this series. The next subject to be taken up is the correlation of studies.

One reason given for the success of the Educational club is the unusual character of its government. It is controlled by a council of twenty members, who elect their own officers and committees, who are also the officers and committees of the club. There is an executive committee of seven, who manage all the business of the club, and determine the character of the meetings.

The members of the club are the leading teachers of the city. The club meetings are open to the public, and as the members get no advantages which are not shared by the general public, their motive for belonging is not a selfish one.

The proceedings of each meeting have been sent to the educational journals of the country, and several pamphlets have been published by the club. The most important of these are Dr. Brooks' introductory address Dr. James' paper on "Philadelphia's Need of a Commercial High School," Professor Skidmore's "Evolution of Play," Mr. Gideon's "Substitute Question," Professor Snyder's "Report of Correspondence." Another pamphlet about to be issued is on "Teachers' Pensions." "The Educational Club Bulletin," is issued every two months.

By these methods, the club, although only four years old, has become widely known outside of the city, and has an assured place among educational organizations.

Work for State Certificates.

CONCORD, N. H.—Under the new state law, passed last year, all teachers are required to hold certificates. Probationary certificates, good for one year, are granted by the state superintendent or local school boards. These must be renewed at the end of the year if the teachers care for re-election. Permanent certificates are granted by the state superintendent to such persons as pass with required proficiency the examinations held under his direction. Teachers may take state or school board examinations as preferred. The statute regarding examinations by school boards provides that examinations shall be held annually in June or July. The examination may be oral or written. The terms of the provision are lax enough to allow almost any examination by the school board. The tendency of the school board

examinations will be to be too hard on new candidates and lenient with the experienced teachers. Teachers will probably see that it will be to their advantage to take a state examination and get a state certificate.

Truant Law a Success.

CHICAGO, ILL.—A conference held between the committee on compulsory education and the woman's club shows that the truant law is responsible for the annual attendance at school of 4,000 children who otherwise would be running the streets. This report will no doubt be a surprise to many who regard the truant law as a failure.

Much of the effective working of the law is due to the help of the various charitable agencies. While the truant officer has a right to send the child to school he has not funds for clothing him, and in many instances the need of clothing and not parental neglect is the cause of truancy.

Partisan Policy of Governor Griggs.

The action of Gov. John W. Griggs, of New Jersey, in failing to reappoint the Rev. Dr. George C. Houghton, the rector of Trinity Episcopal church, Hoboken, as a member of the board of trustees of the Hoboken industrial school of manual training, is deplored by all friends of that institution. Dr. Houghton and Mrs. Martha B. Stevens, who has contributed much to the school, have both been connected with the institution ever since it was started. At the expiration of Dr. Houghton's term recently, Gov. Griggs appointed Archdeacon William H. Jenvey in his place. Mrs. Stevens, in an interview published in the *Sun* said:

"Dr. Houghton was the active head of the school. He visited the New York industrial schools and secured all the teachers for our school and arranged all the classes. He was the one member of the board who attended to all the work. I think that after having given money for the new library building in which there are to be rooms for the industrial school, my wishes in the matter ought to have been consulted before the governor dismissed the doctor. Dr. Houghton has taken a great interest in the school, and made several improvements which he alone could do, owing to his knowledge of the business."

"Now, remember, I do not want to cast any reflection upon Dr. Jenvey, who I think a very efficient and able man, and one whom everybody trusts and respects. He will make an excellent member of the board, and Gov. Griggs could not have appointed a better man to take Dr. Houghton's place."

It is said that the change was made for political reasons. Archdeacon Jenvey is a Republican and Dr. Houghton is a Democrat.

Male Grammar School Principals.

DANVERS, MASS.—The *Mirror* has asked the school superintendents of a number of cities in Massachusetts for their opinion regarding the substitution of female for male principals in grammar schools.

Supt. Perkins, of Salem, says that while he has the highest opinion of the natural aptitude of women for teaching, he thinks it is a mistake to employ them as principals of grammar schools.

Supt. Bruce, of Lynn, prefers a male principal for large schools, as more can be expected and demanded from a man.

Supt. Seaver thinks that if a woman is fitted for the position and is strong enough, he sees no reason why she should not be a principal.

Supt. Rackliffe, of Brockton, believes that while women make very successful principals, a grammar school turns out better citizens if its principal be a man.

Supt. Baldwin, of Danvers and Belmont, expressed himself in favor of male principals.

Supt. Gifford, of Peabody, thinks that it is desirable to have men and women teachers in the schools, but he prefers male principals for grammar schools.

Do They Study?

JERSEY CITY.—Principal Haskell has instituted an innovation which strikes terror into the hearts of many of the high school pupils. In order to find why many of the pupils fail in special subjects Mr. Haskell has supplemented his reports by letters to the parents. The parent is asked whether the child is studying the required amount, two hours, or whether he is wasting his time.

Nearly all of the parents expressed themselves as pleased with the interest shown by Mr. Haskell in their children, and promised to see that they devoted more time to their studies.

Cold Water for All.

Of all the modest charities that do so much to relieve the hardness of life among the city's poor in hot weather there is none whose ministrations are more grateful or more comforting than those of the Moderation Society. It is the object of this organization to distribute free ice and ice-water, and it does so, not only from stationary sources, but also from a perambulator fountain, a large tank on wheels which is taken from point to point in the

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city and from which ice and ice-water are supplied freely and without restriction to whosoever will have them. The relief which such a distribution affords is so practical and direct, so refreshing and comforting, that the society in charge of it deserves recognition as one of our worthiest charities.

This fountain is little short of an inspiration of rational benevolence, and its daily appearance during the hot weather in the thickly peopled quarters, where the poor and suffering are housed, is a visitation of mercy and grace. The society furnishes on an average more than 2,000,000 drinks of ice-water and tens of thousands of pieces of ice to the poor every summer, and if the testimony of the parched lips and fevered brows its kindly work has relieved could speak together there would be a grand anthem of praise and thanksgiving for a charity so sincere and so useful in its ministrations.

The Jacksonville, Fla., Kindergartens.

In November, 1893, Mrs. O. E. Weston came from her home in Chicago to assist in the establishment of kindergartens. The Southern Kindergarten Association having been organized a short time before her arrival, they secured suitable rooms, furnished them with necessary material and opened a kindergarten of thirty children, under the supervision of Miss Castle, of Chicago; Mrs. Weston taking charge of a training class.

The following year a junior training class was formed, and on May, 30, 1895, twelve graduates received diplomas. During the year '95 four pay kindergartens and one free kindergarten were successfully operated by the association. The Kindergarten club takes charge of the Brooklyn Free Kindergarten, on Wednesday and Saturday afternoons.

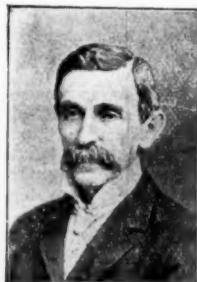
The Central Kindergarten is located in Oxford Hall, Laura street. Miss Ackerly having charge of the kindergarten, Miss Hungerford, of the connecting class. Miss Alice Ackerly assists with the music. The room is large and well supplied with kindergarten furniture and material and is prettily decorated. The school has been well attended and the parents and patrons are very enthusiastic. The program has been planned to lead the children out into the light and sunshine for their nature study. They have derived much pleasure from walks, but most of all from their garden. These they have hoed, raked, and planted themselves. The garden has been the basis for a great deal of gift work, language, and number work in both departments. A pet rabbit has also proved a beginning for science work in the animal world, as well as giving the little ones practical lessons in nurture and tenderness to the care for the unprotected.

It is firmly believed that the day is not far distant when there will be a great extension of the kindergarten idea in Florida, and an institution built up in Jacksonville to represent in its best form the New Education as it is understood by the best educators.

Paternalism in Mr. Rockefeller's University.

Much feeling has been aroused among the students of Chicago university by the decision of the faculty against allowing Eugene V. Debs to speak before the students. At a meeting of the local Oratorical Association it was agreed to invite the labor leader. When the members of the faculty were informed of this they sent out for the representatives of the association and forbade the sending of the invitation. They declared that Mr. Debs belonged to a dangerous element, and that his appearance at the university with the sanction of the faculty would endanger the standing of the institution among the orthodox.

The Pennsylvania Railroad Company's Fiftieth Anniversary.



PRES. G. B. ROBERTS.

On April 13 the Pennsylvania railroad celebrated the fiftieth anniversary of its incorporation. For more than twenty years prior to April 13, 1846, railroads had been chartered, but not built, and the state, in order to secure the excursion transportation facilities equal to those of New York, had, at an expense of \$14,000,000, constructed a combined railroad and canal line from Philadelphia to Pittsburg, which it operated in an unsatisfactory way, and at great loss. This through line was put in operation in 1834 and occupied practically the same route over which the Pennsylvania railroad trains now run. On December 10, 1852, cars were run over the Pennsylvania lines from Philadelphia to Pittsburg, using the portage road over the mountains. On February 15, 1854, the inclined planes on the mountain route were abandoned, and the company's own tracks were used there. On August 1, 1857, the state transferred its main line to the Pennsylvania company. The Harrisburg and Lancaster road was leased in 1861 which gave a through line between Philadelphia and Pittsburg.

Brief Notes.

President Dougherty, of the National Educational Association, has asked Prof. J. C. Freeman, of the University of Wisconsin, to discuss Brander Matthews' paper on Literature at the meeting of the association at Buffalo, N. Y., in July.

BUFFALO, N. Y.—During the first five months of its existence the School of Pedagogy has enrolled 92 students. 72 of these have had experience as teachers, in kindergartens, primary or grammar, private and high schools. Besides the regular work of the school, its stimulus is seen in the organization of two "mothers' clubs" for systematic child study. Among the needs of the school is the appointment of a professor to prepare teachers to teach nature study or science in schools of all grades. The introduction of this branch would demand a well-equipped laboratory. A non resident of Buffalo has given \$500 for this purpose, and it is hoped that public-spirited citizens will contribute toward the fund. They have already given proof of their generosity in establishing the school.

Professor Wheeler and the Cornell students with him in Greece are making the most of their year on classic soil. The last letter received at Cornell from them tells of tramping across Greece from Athens to Pylos, in the old Peloponnesus, now known as the Morea. The shore at Pylos has been called sandy by poets and historians from Homer down, and the tired Americans voted the epithet descriptive as they tramped wearily across the beach.

COLUMBUS, OHIO.—The House has passed a bill for a school pension fund at Cincinnati. The fund will be raised by retaining 1 per cent of the salaries of all the teachers. One section of the bill provides that all teachers who have taught seven years shall hold their positions during good behavior. The board may pension any teacher at half pay who has taught for twenty years, and who retires because of physical disability. Women teachers who have taught thirty years, and men who have taught thirty-five, have a right to retire at half pay.

Mrs. Helen Page Bates, a graduate student and fellow in economics at the University of Wisconsin, where she expects to receive the degree of Ph. D. at the coming commencement, has been elected to the chair of Economics in Rockford college, at Rockford, Ill.

ST. LOUIS, MO.—It has been decided that the Teachers' Committee will recommend the school board to restore to the ranks of teachers all the married teachers who were dropped a few years ago.

MADISON, WIS.—At the convention of the Southwestern teachers State Supt. J. L. Emery read a paper on the township school system, which was of unusual interest, as Mr. Emery has been commissioned by the legislature to make a report on this system. In order to study its workings he visited a number of states where it is in force. In Wisconsin the system is optional. Forty-six have adopted it, but Mr. Emery thinks that the statistics of the cost per capita do not encourage the change from the district to the township system. Two-thirds of the county superintendents have declared in favor of the present system.

It is significant of the close adherence to investigation by scientific workers in America to-day that of all the American botanists none is devoting himself entirely to the theory of plant evolution. The one who is to-day most prominent in this line is Prof. L. H. Bailey, of Cornell university, and his activities are too manifold to permit concentration on this branch. Nevertheless his eminence as a philosophical evolutionist is well known. He is to be one of three scientists to read papers at the annual meeting of the American Philosophical Society, at Philadelphia, on May 1. This society, founded by Benjamin Franklin, has been ever since the greatest general scientific society in this country. The meeting this year is to be devoted to evolution. Professor Cope, of the University of Pennsylvania, is to read the paper on the paleontological side of evolution, Professor Minot, of Harvard, a paper on embryological side, with special reference to his theory of panplasm, and Professor Bailey, of Cornell, will present the recent philosophical conceptions in the evolution of the plant world.

MERIDEN, CONN.—The board of education has adopted a new rule in regard to entrance to the high school. Members of the classes in grammar schools who have maintained a standing of seventy in their examinations will not be required to take the entrance examinations at the high school. Any pupil who has fallen below seventy in a study must take an examination in that study.

Acting School Visitor J. T. Pettee thinks this change a good one as the children do not do themselves justice in the high school examinations.

Announcement of Association Meetings.

April 24, 25.—Northern Illinois Teachers' Association at Ottawa.
 April 30, May 1 and 2.—Western Drawing Teachers' Association at Indianapolis. Newton Reser, Lafayette, Ind., Sec'y.

April 30, May 2.—Western Drawing Teachers' Association at Indianapolis, Ind.

May 2.—Twenty-first annual meeting of the New England Normal Council, at Boston. Pres. W. E. Wilson, Providence, R. I.; Sec'y, Mary L. Dodge, Salem, Mass.

Western Colorado Teachers' Association at Salida in May. J. P. Jackson, Leadville, President; J. S. Kilgore, Salida, Sec'y.

June 23.—Texas State Association of Colored Teachers at Corsicana. W. H. Broyles, Hearne, president.

June 23-25.—Thirty-fourth annual meeting of the Missouri State Teachers' Association at Perth Springs. President, J. M. White, Carthage; Sec'y, E. D. Luckey, Elberdville School, St. Louis.

June 23-25.—Twenty-ninth session of Arkansas State Teachers' Association at Arkadelphia. T. A. Futrell, Marianna, Pres.; J. J. Doyne, Lonoke, Sec'y.

June 24-26.—Thirty-fourth annual meeting of the University Convocation of the State of New York, Albany, N. Y. Supt. Leigh R. Hunt, Corning, N. Y., Chairman.

June 30, July 1, 2.—Alabama Educational Association at Talladega. July.—American Institute of Instruction at Bethlehem.

July 1, 2, 3.—Fifty-first annual meeting of the New York State Teachers' Association at Rochester. President, J. M. Milne, Oneonta.

July 6, 7, 8.—Conference of Expression at Boston. Address Miss Helen M. Cole, 458 Boylston St., Boston, Mass.

July 7-10.—National Educational Association at Buffalo, N. Y. President, Supt. N. C. Dougherty, Peoria, Ill., Secretary, Irwin Shepard, Winona, Minn.

July 9, 10, 11, 12.—American Institute of Instruction at Bethlehem, N. H.

Oct. 14, 15, 16.—Fourteenth annual meeting of the State Council of Superintendents at Utica.

December.—Holiday Conference of the Associated Academic Principals at Syracuse.

December.—Fourth annual meeting of the Association of Grammar School Principals, at Syracuse.

New Jersey State Teachers' Association at Trenton, in December. S. E. Manners, Canada, Pres. J. H. Hulsart, Dover, Sec'y.

Summer Schools,

NEW ENGLAND STATES.

MASSACHUSETTS.—Martha's Vineyard Summer Institute at Cottage City, Mass. Nineteenth annual session. Beginning Monday, July 13. Elementary course, high school course, academic departments, and a general course in pedagogy and psychology open to all members having any full course ticket. Address Dr. W. A. Mowry, Hyde Park, Mass.

Summer Courses at the Massachusetts Institute of Technology during June and July. Address H. W. Tyler, Ph. D. Sec'y.

Harvard University Summer School. Begins July 3. Address M. Chamberlain.

The Thirteenth Annual session of the H. E. Holt Normal Institute of Vocal Harmony at Lexington, Mass.

Sauveur College of Languages and Amherst Summer School. Twenty-first session begins July 7, continuing six weeks. Prof. W. L. Montague, director and manager.

The Connecticut Valley Chautauqua at Northampton, Mass. July 14-24.

NEW HAMPSHIRE.—New Hampshire College Summer School of Biology. At Durham. July 6 to August 1. Pres. Hon. George A. Watson, New Boston. Secretary, Hon. Joseph Kidder, Manchester.

National Summer School of Music and Drawing for Teachers. Tenth season, at Plymouth, N. H., July 20 to August 6. Address G. E. Nichols, manager, 13 Tremont Place, Boston, Mass.

MIDDLE ATLANTIC STATES.

NEW YORK.—The National Summer School, Glens Falls, N. Y. Beginning July 14. Four departments—professional, academic, training class, and drill and review. Sherman Williams, manager, Glens Falls, N. Y.

Summer School of Manual Training. Teachers college, Morningside Heights, New York city. July 6 to August 8. Address Charles A. Bennett, Teachers college, New York city.

Summer Courses, New York university at University Heights, New York city. July 6 to August 14. Mathematics, chemistry biology, experimental psychology, comparative study of systems of education, Semitic languages, German, French, economics, and physical training. Courses in French and German, experimental psychology, comparative systems of education, begin July 13 and end August 21. The last two courses may be taken as part of the regular work in the School of Pedagogy. Address Prof. Chas. B. Bliss, University Heights, New York.

The Metropolitan Normal Art Summer School at the new building of the University of the City of New York, Washington Square. Four weeks, beginning July 13. Address Langdon S. Thompson, 12 Park street, Jersey City, N. J.

Buffalo University School of Pedagogy Summer School. July 13-24. Address F. M. McMurry, School of Pedagogy, Buffalo, N. Y.

Cornell University Summer School July 6-August 15. Address David Fletcher Hoy, secretary-treasurer, Ithaca, N. Y. Catholic Summer School at Plattsburg, N. Y., July 12, to August 16.

Chautauqua Summer Schools. Open July 11. Address W. A. Duncan, Sec'y Chautauqua, N. Y.

PENNSYLVANIA.—American Society for the Extension of University Teaching. Fourth summer meeting, at the University of Pennsylvania, Philadelphia. Four weeks, beginning July 6. Arrangements for session of 1896 include Department A, literature and history; B, psychology; C, music; D, science; E, economics and civics; F, mathematics. Address Edward T. Devine, director, 111 S. Fifteenth street, Philadelphia.

The Pennsylvania Chautauqua at Mt. Gretna. Fifth annual assembly from July 8 to August 4. The National School of Oratory will make its headquarters at the Pennsylvania Chautauqua this year. Address Rev. E. S. Hagan, secretary, Lebanon, Pa.

NEW JERSEY.—Berlitz Summer School of Languages at Asbury Park, N. J. From the first Monday in June to the last Friday in August. Under the management of Prof. N. A. Joly, assisted by superior native teachers. Address till June 1, 1122 Broadway, New York.

MARYLAND.—The Mountain Chautauqua, Mountain Lake Park, Md., August 5-25.

CENTRAL STATES.

ILLINOIS.—Cook County Normal Summer School. July 13 to July 31. Address W. C. Jackman, 6916 Perry ave., Chicago, Ill. Lake Forest University Summer School at Lake Forest, Ill. Open from June to October. Address Professor Malcolm Mc Neil.

Greer Normal College Summer School at Hooperston, Ill. Address Sec'y Greer, Normal College, Hooperston.

Chicago Kindergarten College. Summer School of Pedagogy. July 1 to July 11. Address Kindergarten College, 10 Van Buren St., Chicago.

Summer quarters of Morgan Park academy, at Morgan Park, Ill. Two terms of six weeks, from July 1 to September 22.

Summer quarters of University of Chicago, July 1 to September 22. Two terms of six weeks each.

IOWA.—Des Moines Summer School of Method. Seventh annual session, in West Des Moines High School building. For Summer School Annual, address, Des Moines Summer School, Des Moines, Iowa.

MISSOURI.—The Fairmount Chautauqua, Kansas City, Mo., May 30-June 14.

INDIANA.—Indiana University Summer School. Class work begins June 16. Address C. S. Thomas, Bloomington, Ind.

Summer Term of the Indiana State Normal School. June 29 to Aug. 6. Address Pres. W. W. Parsons, Terre Haute, Ind.

MICHIGAN.—University of Michigan Summer School. June 29 to August 7. Nineteen departments, seventeen courses. James H. Wade, secretary, Ann Arbor, Mich.

Bay View Assembly and Summer university at Flint, Mich., July 8 to Aug. 11. Address J. M. Hall, Flint, Mich.

MINNESOTA.—University of Minnesota Summer School, Minneapolis, Minn. Fifth Annual session July 26 to Aug. 21. Address D. I. Kieble, conductor, University of Minn.

Summer Institute for Indian school employees at St. Paul, Minn., July 20 to 25.

KENTUCKY.—The Kentucky Chautauqua at Lexington, Ky. June 30-July 10.

TENNESSEE.—Monteagle Assembly Bible Institute, Normal Institute, and Summer Schools, during July and August. Address A. P. Bourland, General manager Nashville, Tenn.

NEBRASKA.—The Beatrice Chautauqua, Beatrice, Neb. June 16-28.

Lincoln Normal University Summer School. Begins June 15. Address Lincoln Normal University, Lincoln, Neb.

KANSAS.—Summer Institute for Indian school employees, at Lawrence, Kan., July 13 to 18.

WISCONSIN.—Summer School for Physical Training. Under the auspices of the North American Gymnastic Union, at Milwaukee, Wis. Six weeks, June 29 to August 8. Address Wm. A. Stecher, Third and Chestnut Sts., St. Louis, Mo.

ROCKY MOUNTAIN AND PACIFIC STATES.

COLORADO.—Denver Normal and Preparatory Summer School. Third annual session June 15 to July 18. Address Fred. Dick, Kittredge building, Denver, Colo.

CALIFORNIA.—Summer Institute for Indian school employees San Francisco, at Cal., August 3 to 8.

EUROPE.

Summer School of Art and Science Edinburgh summer meeting. Tenth session, at the University Hall, Edinburgh, Scotland. Part I. August 3 to 15, Part II. 17 to 29. Address T. R. Marr, Outlook Tower, University Hall, Edinburgh. Dr. Rein, of Jena will be among the professors.

GERMANY.—University Summer School at Jena, Germany. Address Prof. W. Rein, Jena.

The Ruin of Acadia.

TOPIC EXERCISE.

(This is given to be read and studied by a pupil; on being called on he either rises and gives the substance of this statement, or preferably passes to the platform and there bowing to the teacher and to the pupils delivers it.)

In the year 1713, France and England made a treaty—called the treaty of Utrecht because made at that place; by this treaty Acadia, what is now called Nova Scotia was given to England by France. The great majority of the people (about 3,000 in number) were French; the occupation of Louisburg and Annapolis by English troops was all that was done at the time. The people lived peaceably and increased in numbers; in forty years there were 16,000. The deputy governor, Lawrence, pretended there was a likelihood of an insurrection; a fleet with 3,000 soldiers sailed from Boston on May 20, 1755 to humiliate the inhabitants.

There were two posts still held by the French; these were attacked and taken by the English. Then it was determined to drive the inhabitants into banishment. An oath was devised which the French felt as Catholics they could not subscribe to; then the English demanded their firearms and boats. They were compelled to go into the ships and leave their estates and property; their lands were given or sold to the English who formed about one-fourth of the population. What property was not taken away by these poor Acadians was burned; they saw their houses, churches, and stacks of wheat burning as they sailed away.

At the village of Grand Pré, 418 unarmed men were shut up in a church; the rest, the women and children were put on ships; then the men were ordered out and without reference to whether they were related by family ties were also forced on board. Thus about 1,900 were packed into the ships separated in most cases from their fathers and mothers and friends. As they sailed away, they knew not whither, nor knowing where their friends were they saw their homes wrapped in flames. From other points other Acadians were taken so that in all 3,000 were carried away by the English ships and scattered helpless, half starved, and dying among the colonies, some in Maryland, some in Louisiana. The history of civilization furnishes no parallel to this wanton and wicked destruction of an inoffensive colony and the English nation even at this late day should express its disapproval and its regret that such a wrong was done.

It is on this historical fact that Longfellow has based the beautiful poem "Evangeline," which makes every boy and girl who read it sympathize with the helpless Acadians.

Soil Regeneration.

(This is given for a "topic exercise" or talk by an older pupil. Having read it over with care so as to master the ideas, when called on the pupil rises, passes to the platform, bows slightly to the teacher and proceeds.)

As the farmer is drawing from the soil by the crops he raises he must return these to it or his farm will become impoverished. The three principal elements he must return are nitrogen, phosphorus, and potash, for these are taken away by all crops.

Nitrogen.—The best and cheapest substance to put on the soil to give it nitrogen is sodium nitrate; this is brought from the province of Tarapaco, formerly a part of Peru; the beds are on a strip of land about 250 miles long north and south and $2\frac{1}{2}$ miles wide. No vegetation exists here; the nitrate beds are on land 2,000 ft. above the sea and distant from it 14 miles. It never rains here; if it did the sodium nitrate would be destroyed, as it absorbs water like salt.

The natives call the nitrate *caliche*; it has something of the appearance of salt, is yellowish white in color usually. It is dug out of the ground; there is a layer of sand about a foot thick, then a compact crust six to ten feet thick; then comes the *caliche* which is in a compact mass four to six feet thick which has to be blasted out.

The masses of caliche are loaded on carts and taken to the works where it is crushed, put into water and boiled; the solution is allowed to cool and then the nitrate crystallizes as salt or sugar does; these crystals are put into sacks and exported.

Phosphorus is applied to regenerate the land and is obtained from phosphate of lime which is found in various parts of the world. It is found in large quantities in Florida. This rock is ground and sprinkled with sulphuric acids; it is then spread on the ground.

Potash.—The ashes of hardwood trees are put in a barrel, and water poured on; the liquid that comes out is called lye; this is boiled until a solid substance is obtained—this is potash, it is crushed and spread on the ground. Chloride of potash is mined at Stassfurt, Germany, and is used in the same way. These three substances are mixed in various proportions and sold as fertilizers. Ordinary manure contains these substances, and that is the reason it is used. If they are not applied to farming land it soon fails to produce crops.

Notes and Queries.

M. G. SANDFORD.—The reason why Easter was on March 29 in California and April 5 east of that state is this: Easter is the first Sunday after the first full moon after the vernal equinox. The moon became full three hours earlier in California than it did in the East because California is so far west; these three hours occurred on the last day of the week at midnight, or to state in other words, the moon was full on Saturday night the 28th, in California, and did not become full in the East until Sunday morning, the 29th. The vernal equinox is when the sun crosses the equator on its northern journey (the days and nights are equal); it occurred all over the world on the 19th of March.

What is the Rig-Veda?

A. C. B.

The term Rig-Veda, or, to use the full title, Rig-Veda-Samhita, is applied to the collection of the most ancient Sanscrit hymns and sacred texts, 1,028 in number. It is undoubtedly the oldest book belonging to the Aryan people, for the oldest metrical portions of the collection are attributed to 1500 B. C.

Kindly give a solution to these equations $x^2 + y = 11$; $x + y^2 = 7$ and oblige a Texas subscriber. E. M. QUINBY, Houston.

These equations come in annually at least. They were put in the hands of the writer some forty years ago by Prof. Robinson, the noted author of Robinson's series of mathematics. It is generally believed that they are not resolvable by the usual artifices employed on simultaneous equations. They may be solved by the following method:

Eliminating x and (1) results; this may be put in the form (2). Here it is apparent that the co-efficient of y is between 13 and 14; a trial is made of 13 and (5) results; a trial is made of 14 and (8) results.

Now if the root is a whole number, the number under the second radical in (5) and (8) must be square numbers above 12 and below 44; that is either 25 or 36. Supplying these in (5) and (8) will give (9) and (10) from which the value of y appears to be 2 or 1.

$$\begin{aligned}
 (1) & x^3 + 4x^2 + 3x = 72 \\
 (2) & x^2(x+4) + 3x = 72 \\
 (3) & 4x^2 + 3x = 72 \\
 (4) & x^2 + 7.5x + 37.5^2 = 187.5 \\
 (5) & x + 37.5 = 4.257 \\
 (6) & x = 3.882 \text{ } 1^{\text{st}} \text{ approx.} \\
 (7) & x^2(3.882 + 4) + 3x = 72 \\
 (8) & 7.882x^2 + 3x = 72 \\
 (9) & x^2 + 3.882x = 9.13 \\
 (10) & x^2 + 3.882x + 19.03^2 = 9.13 \\
 (11) & x + 19.03 = 3.027 \\
 (12) & x = 2.83 \text{ } 2^{\text{nd}} \text{ approx.} \\
 (13) & x^2(2.83 + 4) + 3x = 72 \\
 (14) & x^2 6.83 + 3x = 72 \\
 (15) & x^2 + 4.377 + 2.288^2 = 10.59349 \\
 (16) & x + 2.288 = 3.255 \\
 (17) & x = 3.027 \text{ } 3^{\text{rd}} \text{ approx.} \\
 (18) & -b + \sqrt{4ac + b^2} \\
 & \quad 2a
 \end{aligned}$$

This method is also applicable to equations where the root is not a whole number. Employing it on the equation numbered (11) gives (13)—the first approximation. Supplying this approximate value in (11) and (14) results; then the second approximation is reached (15). Employing this in (11) the result is (16). The second approximation is always very close to the actual value.

New Books.

Hundreds of men who are now occupying important positions in educational institutions have listened to the voice and profited by the instruction of the great teacher, Louis Agassiz. In spite of his contributions to science the best legacy he left the world is the training he gave these teachers of science. Others who can no longer hope to hear his voice can obtain help and inspiration by reading his life. Hitherto no unbiased account of the life of this great naturalist has been written. In his work entitled *Life, Letters, and Works of Louis Agassiz*, Jules Marcou, who was his friend for many years, has attempted to give a true picture of the man, showing his weakness as well as his strength. It is a good work for teachers to have in their collections. This biography is in two crown 8vo. volumes of about three hundred pages each, with illustrations. (Macmillan & Co., New York. \$4.00.)

It has been known for some time that Edward S. Ellis, M. A., the well-known author, was at work upon a history, to be known as *The People's Standard History of the United States*. The publishers made flattering promises in regard to the thoroughness with which the narrative should be prepared, the high artistic quality of the illustrations, and the beauty of the typography. The first numbers of the work are out and they fulfil, and more than fulfil, the high expectations formed. The narrative is circumstantial, yet unencumbered by unimportant details. The author has a strong sense for historical perspective; and he narrates the important events of our history in a pleasing style and without becoming prolix. He has been at work on this history for years, and considers it his masterpiece. The first four numbers give the history of the wonderful periods of discovery and colonization, in which there are so many instances of heroism that the narrative reads like a romance. Mr. Ellis has not made it a bare catalogue of dates, but instinct with life; with him we live over again the lives of the Puritans and Cavaliers; the Dutch, French, and Spaniards who helped to found civilization on this continent. The fourth number takes the history up to about the middle of the eighteenth century. At the beginning of each chapter is a brief bibliography, which students of our history will surely appreciate. The *Standard History* will be completed in thirty parts, containing sixty-four pages each, and issued at the rate of two parts a month, at fifty cents a part. Upwards of twenty of the leading American artists have been engaged for some time preparing an extensive series of original and elaborate drawings for the work. Truth and beauty have been aimed at in the full-page illustrations, ornaments at the beginning of chapters, initial letters, and the host of small illustrations scattered through the pages. (The Woolfall Co., 114 Fifth avenue, N. Y.)

In his preface to *A History of American Literature*, Prof. Fred. Lewis Pattee, of the Pennsylvania State college, says that he "has endeavored to follow the development of the American spirit and of American thought under the agencies of race, environment, epoch, and personality. He has recognized that the literature of a nation is closely entwined with its history, both

civil and religious. As far as possible he has made the authors speak for themselves, and he has supplemented his own estimates by frequent criticisms from the highest authorities." The fact is recognized that no study of a text-book can take the place of a study of the author's works; and hence Prof. Pattee's object has been to lead up to that desirable result. The book gives a general *résumé* of American literature from early colonial times to the present, showing it to be an integral part of our national history and closely interwoven with the distinctive events of each era. "The First Creative Period" (1812-1837) indicates its opening individuality; "The Second Creative Period" (1837-1861) marks the advent of such bright lights as Hawthorne, Emerson, Whittier, Longfellow, Lowell, Holmes, etc., the "Augustan Age" of American literature. Chapters on "The Transcendentalists," "The Cambridge Poets," "The Historians," "Woman in Literature," "The Diffusive Period," etc., describe other epochs of great interest and importance. The book shows thorough scholarship and good judgment and fairness in the criticisms. It considers all the authors that are worthy of consideration from the earliest times to the present. The biographies and criticisms of recent writers of prose and verse will be particularly valuable. (Silver, Burdett & Co., Boston. 12mo., 487 pp. Cloth, \$1.50.)

A choice volume has been added to the Classics for Children series by Edwin Ginn who has endeavored to give in a small compass the best sayings of *Epictetus*, a famous philosopher, from whom Marcus Aurelius drew much of his inspiration. If instead of reading much that is written nowadays, young people would read more of such literature as this they would be better off, both as to mind and character. The placing of them in the school library will be the most effective means of getting them into the hands of pupils. (Ginn & Co., Boston.)

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The Pennsylvania Railroad.
CELEBRATION OF THE FIFTIETH ANNIVERSARY.

We are reminded of the comparatively recent development of the railroad system in the United States by the celebration in Philadelphia, April 13, of the fiftieth anniversary of the formation of the Pennsylvania Railroad Company, and the presence there of many who were connected with the enterprise at the first. Some corporations can count their life by centuries, but few, if any can equal in wealth and power this one that bears the name of the Keystone state. It is the giant of all the great railroad corporations in the United States.

The celebration in Philadelphia brought together the leading officers of the road and a host of its friends and well-wishers from Pennsylvania and other states. Among the principal officers are George B. Roberts, president; Frank Thomson, first vice-president; John P. Green, second vice-president; Charles E. Pugh, third vice-president; Sutherland M. Provost, general manager; James R. Wood, general passenger agent; Geo. W. Boyd, assistant general passenger agent; Samuel Carpenter, Eastern passenger agent; W. W. Lord, Jr., assistant Eastern passenger agent. There were exercises at the Academy of Music at which addresses were made by Pres. Roberts, Governor Hastings, J. Twinig Brooks, Joseph H. Choate, and others, and a reception in the big building at Broad and Market streets.

President Roberts said in his address that the Pennsylvania Railroad Company owns now and controls, or has owned and controlled, 256 corporations, which by consolidation and merger are to-day represented by 138 distinct companies, most all of them engaged in transportation enterprises, but some of them engaged in mining and manufacturing industries. It controls 9,000 miles of railroad, either by lease or ownership, a length of line that is more than one-third the distance around the entire globe. The aggregate capital of the corporations which are owned and controlled by the Pennsylvania corporation is about \$834,000,000; tonnage last year, 160,000,000; passengers carried, 75,000,000; No. of locomotives, 3,400; No. of cars, 141,000, including 226 barges, steamboats, and other craft used in connection with the lines; gross income, \$133,000,000; paid out in salaries, \$36,000,000; No. of men on the pay roll 97,000. The company has paid promptly, on the day it agreed to pay, every pay roll it undertook to pay. No man has ever asked it justly for his money who has not promptly received it when it was due.

Since the Pennsylvania Railroad Company was formed Philadelphia has grown from 500,000 to 1,200,000 and Pittsburg from 40,000 to 280,000. The Pennsylvania's connections now stretch westward to Cincinnati, Louisville, St. Louis, Chicago, and Cleveland.

Each man employed by the Pennsylvania Railroad Company stands closely alongside of each other man in sharing his prosperity and his adversity. As an evidence of this, some ten years since they combined together to form their Relief Fund, and that Relief Fund to-day numbers 52,000 members, and has distributed among its membership in the way of caring for the sick, for the widows, for the orphans, for those who, in the performance of their duty, have sacrificed their lives, sacrificed their limbs, and otherwise, over six million dollars.

We have not space to detail all the steps in the growth of the Pennsylvania system. The first promoter of railroad enterprise in Pennsylvania and New Jersey was Col. John Stevens, who was in the field as early as 1815. The incorporation of the Pennsylvania Railroad company was authorized

by an act of the legislature, approved April 13, 1846. The organization of the company took place March 30, 1847, the grading of the first twenty miles west of Harrisburg was begun in July of that year; and the first division of the new road was opened Sept. 1, 1849. In 1857 the company obtained a line of its own from Philadelphia to Pittsburg, and since then the extension of its lines has gone on with great rapidity.

New Books.

Four-Handed Folk is the odd title of Olive Thorne Miller's latest book. In her delightfully familiar style she describes the ways of a number of odd and unusual pets, viz., the kinkajou, armadillo, lemur, marmoset, chimpanzee, spider monkey, ocelot, etc. The author not only describes these animals, but gives her own observations of their ways and thus furnishes a better insight into their character than one would get from a merely scientific description. Though the book is an intensely interesting one for grown folk, it is an especially good one to place in the hands of a child, as it will arouse sympathy for animals and teach kindness to them and incline him to independent observations in the field of natural history. (Houghton, Mifflin & Co., Boston. \$1.25.)

Interesting Notes.

In June, 1894, a special commission was appointed by the secretary of the treasury to investigate and report upon the present immigration laws; the effects of immigration on wages; possible remedies for existing evils of immigration, etc. As a part of its work, the commission sent circular letters to all the governors asking them what nationalities of immigrants are preferred in their several states, and the order of these preferences. Of the 52 preferences for different nationalities of immigrants expressed in these replies 15 are for Germans, 14 are for Scandinavians, 12 are for English, Scotch, or Irish, 3 are for French, 2 are for Swiss, 2 are for Italians, 1 is for Hollanders. 1 is for Belgians, 1 is for "North of Europe," 1 is for Americans. There are only 2 calls for immigrants from Southern and Eastern Europe, and these are both for Italians. One of the governors asking for Italians expressly states that he is "not sure that immigrants from any foreign country are desirable as laborers" in his state, and the other says "that unskilled labor is not desired" in his state, but that farmers with small means are highly desirable. As very few of the Italian immigrants now coming to this country settle down and become independent farmers, but are almost entirely unskilled laborers, it may be concluded that in the second case Italian immigration of its present character is not desired. There is no call for Poles, Russians, Hungarians, Bohemians, or the other races of Southern and Eastern Europe and of Asia. The immigrants from Northern and Western Europe, such as the English, Irish, Scotch, German, Scandinavians, and French, who are desired as immigrants in all parts of the United States, are as a whole well educated, their being on the average only four per cent of illiteracy among them, while the illiteracy of the immigrants from Austria-Hungary, Italy, Russia, and Poland is over thirty per cent. An educational test, therefore, requiring every immigrant to be able to read and write before gaining admission to the United States, would debar a considerable



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number of the undesirable classes, while it would interfere very little with the immigration from the North and West of Europe.

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It may be briefly explained, without going into the details of a very technical subject, that ordinary light is regarded as due to vibrations which are at right angles to the direction in which the ray travels, but that, in the mathematical theories of light, other vibrations, in the direction of the ray, are indicated, though wholly unknown in experience hitherto. If the new (x) rays prove in fact to be of this character, so as to realize indeed the long-sought longitudinal vibration, the discovery is of the first importance in science, and will hardly find its equal in interest since the discovery of the law of gravitation; for it reveals a new mode of action of force, governing a wide range of phenomena and effects which, until now, have lain entirely outside the bounds of our cognizance.—April Forum.

The true course in the treatment of ills and weaknesses is to assist nature. This is especially the case in regard to nursing mothers who frequently need something to help them stand the drain on the system that is unavoidable at that time. It is claimed that the Pabst Malt Extract is an excellent tonic, being pure, and full of food and strength, and sleep producing.

Canada lynxes have multiplied greatly in Maine during the past few years, and the woodsmen fear that if they continue to increase at the same rate they will prove dangerous and destructive to other game, especially to fawns.

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Copenhagen is to have a woman's theater, with women to manage it, women to act all the parts, and women to write the plays. A beginning will be made with a play by Margaret Thorson.

Cardinal Manning's executors have recovered his papers from Mr. Purcell, his biographer. In consequence of legal proceedings Mr. Purcell has promised, not only to give back all the papers in his hands, but also not to publish or show to any one documents that did not appear in the first edition. It is another case of shutting the stable door after the horse has run away.

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A novel system of disseminating weather forecasts, which seems a trifle ahead of the new scheme of putting bulletins in the post office date stamps has been inaugurated by the Florida Central and Peninsula Railroad. The engineers on that road blow six long blasts of the whistle at intervals of three miles, to warn fruit-growers of cold waves predicted by the United States weather bureau.

The professors in the department of horticulture at Cornell university have just concluded important experiments in developing plants by electric light. Prof. Bailey said: "We are highly gratified with the result. We have proved that by using electric light during the daytime we can produce lilies fully two weeks before those that are grown under natural conditions. The effect is fully as marked in the case of lettuce, but we found that electricity is a positive detriment to peas. We will still continue our investigation on different plants, and will ascertain the effects on vegetation of the Roentgen rays. We shall also experiment on plants by electrifying the atmosphere in which they are grown."

Thirty days vacation tour through the delightful Maritime Provinces Limited; party starts 1st July. Expense very moderate. Teacher-courier,

SCHOOL JOURNAL.

The annual meeting of the stockholders of the Joseph Dixon Crucible Company was held at the company's main office, Jersey City, N. J., Monday, April 20, and out of a possible vote of 7345 shares, there were 7320 shares voted for the re-election of the old board, consisting of Edward F. C. Young, John A. Walker, Daniel T. Hoag, Richard Butler, William Murray, Alexander T. McGill, and Jerome D. Gillet. President E. F. C. Young, Vice President and Treasurer John A. Walker, and Secretary Geo. E. Long, were re-elected by the directors. Judge Joseph D. Bedle was also re-elected as counsel.

It may as well be frankly admitted that geography and geology overlap. All sciences transgress each other's boundaries, and all bounds in nature are largely matters of convenience. Geology never truly interpreted terrestrial history until, with Hutton and Lyell, it took to studying geography.

Nor will the geographer understand the earth which he sees until he takes account of geology. Land forms can not be truly seen or faithfully described until seen and described in the light of their origin. Such forms will hide themselves from the student who thinks they are dead. For him they might nearly as well be buried. The geologist who seeks, for example, the causes of volcanism, will find help in his study of the distribution and relative action of existing volcanoes—in other words, he can not keep from geography. The geographer, in his turn, needs the perspective of ancient volcanic history, if he would appreciate his own facts. Because he has commonly had no such vista, he has burdened generations of boys with the solemn blunder that a volcano is a burning mountain. Thus we may vindicate for each science its own center while granting a generous measure of common facts. The difference is in the point of view, the aim, and method of treatment; the geologist seeks largely that which has been, the geographer that which is, and each must be known in the light of the other. It is precisely the case with two biologists, one of whom studies living, the other fossil, forms. The day is past when they can work apart; yet none would deny that their fields are reasonably differentiated.—*Appleton's Popular Science Monthly*.

Give the average boy something to make and he is happy. But he must have tools. The lathes for wood and meal work, scroll saws, circular saws, and other things made by W. F. and John Barnes Co., Rockford, Ill., are just what he needs. Special prices are offered to educational institutions.

It is said that Mexican millers have to pay thirty-two separate taxes before they can get wheat from the field to the consumer in the form of flour. This is of a piece with the whole system of taxes in Mexico, which is set forth by David A. Wells in an article on "Taxation in Literature and History," in *Appleton's Popular Science Monthly* for May. Some very curious and oppressive taxes prevailing in France before the Revolution are described in the same paper.

Why does one feel chilly when lying down? The reason is simply this. Nature takes the time when one is lying down to give the heart rest, and that organ consequently makes ten strokes less a minute than when one is in an upright posture. Multiply that by sixty minutes, and it is six hundred strokes. Therefore in eight hours spent in lying down the heart is saved nearly five thousand strokes, and as the heart pumps six ounces of blood with each stroke it lifts thirty thousand ounces less of blood in a night of eight hours spent in bed than when one is in an upright position. As the blood flows so much more slowly through the veins when one is lying down, one must supply them with extra coverings the warmth usually furnished by circulation.

—*Harper's Bazaar.*

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Have plants intelligence? Do they ever think? These are interesting questions that would have to be answered by the statement of an observer of the ways of pumpkins and melons. Says he: "Plants often exhibit something very much like intelligence. If a bucket of water, during a dry season, be placed a few inches from a growing pumpkin or melon vine, the latter will turn from its course, and in a day or two will get one of its leaves in the water." We do not vouch for the truth of this, but if there be any young gardeners among our readers it might make an interesting experiment for them next summer when they are pursuing their avocation.—*Harper's Round Table.*

The frauds committed in New York and other states to obtain control of the primaries preceding a presidential campaign, make purification of the party primaries a national political issue. The exposure of these abuses by a trained and experienced writer, who has been connected with practical politics for twenty years, is now published by Chas. H. Kerr & Company, 56 Fifth avenue, Chicago, in the form of a *Primary School of Politics*. The control of the primaries and nominating conventions has been more or less of a mystery to the voter. He has been ratifying at the polls programs that his masters have prepared without consulting him. The ballot is safeguarded by the Australian voting system, but the placing of the candidates on that ballot in all parties is left to the manipulations of the selfish and corrupt elements. With Plattism struggling to control the Republican party, with bossism dictating the very language of Democratic platforms, the primary system becomes the corner-stone in the political structure.

The first of the series of papers on South Africa which Professor James Bryce, M. P., is to contribute to *The Century*, appears in the May number. He corrects the general impression that the country has little natural beauty. Portions of the highlands he compares to Switzerland and the White mountains, and he says that one can never tire of the charm and variety of color in the landscape. Professor Bryce says that the Boers have retained to this day a passion for solitude that makes them desire to live many miles from any neighbor.

Let one of the earliest recollections of the child be of a flag floating gracefully from the school-house flagstaff. Let it be a good flag, like one of those school flags of XXX bunting, with canvas headings and brass grummets made by the Consolidated Fireworks Co., of Park Place, N. Y. Catalogue and special prizes for schools and school boards will be sent on request.

There are some people who never know the luxury of the use of soap and water, partly because they do not use enough of it and partly because they do not use the right kind. Even people who use plenty of soap do not know what they miss by not using Packer's Tar Soap. It is a real luxury for bathing and shampooing, and a constant protection against contagion. It is recommended by physicians for cleansing the hair and scalp.

* It is generally believed that human beings cannot flourish—in fact, can hardly support existence—without an ample supply of fresh air and sunlight. Yet it appears that there is at least one civilized community which gets along very well, although deprived of this advantage. In the salt mines at Wielicza, in Galicia, a population of 1,000 working people—men, women and children—has dwelt for centuries, in health and contentment, several hundred meters below the earth's surface. Galleries extending more

than 80 kilometers have been hewn from the glittering mineral, and houses, a town hall, assembly rooms, and even a theater, built entirely of the same. The little church, with its statues—all of rock salt—is accounted one of Europe's architectural wonders. Well-graded streets are met with, and spacious squares lighted by electricity. In some cases not an individual in successive generations of these modern cave-dwellers has ever beheld the light of day; and yet their average longevity is said to be remarkable. Salt, of course, is unfavorable to the propagation of microbes, and its hygienic properties are proverbial. Could a sanitarium be constructed of this material we might witness surprising results in the treatment of consumption. But what if some hidden water course should one day work its dissolving way into the subterranean city?

A novel piece of electric trolley railway work is proposed for Brighton, the famous watering place in the south of England. The idea, broadly stated, is to propel a girder-built vehicle, weighing some sixty tons, and running on four submerged rails, at a speed of about six miles an hour, through a depth of about fifteen feet of sea water, which is generally rough. It is hoped to have the amphibious road in operation next June. The length of the line is apparently not less than three miles. The rails run along the foreshore at a distance of about 150 to 200 yards from the base of the cliff, slightly above low-water mark, and the high tide submerges them full fourteen feet. Instead of two rails connected by tie rods there are two pairs of fifty-four pound rails, the distance between the two outermost being eighteen feet. Each pair of rails is of two feet eight and one-half inches gauge, and is laid separately on concrete blocks mortised into the underlying stratum of chalk. Sand is periodically washed away and sifted up again around the tracks. The steepest grade is only one-tenth of one per cent, and the sharpest curve has a radius of half a mile. The car may be said to run on stilts, being supported by four splayed-out legs. The double-decked car will carry 150 passengers, who will thus be whisked through the splashing blue waves, free from noise, dust, and jolting, and with perhaps just suspicion enough of adventure to make the whole thing very attractive. The cautious town council wants a good deposit of money to provide for the removal of the structure in case it does not work; but, as a matter of fact, rolling ferries of this character have already been successful elsewhere on a smaller scale.—*N. Y. Evening Post.*

The Nickel Plate Road, is the low rate, best service, short line between Buffalo and Chicago.

On the base of a cliff of granite and marble, running for about two miles along the shore of Lake Massanog, in Canada, and rising in places to a height of three hundred feet, an interesting series of pictographs has recently been discovered. These picture-writings extend at intervals along the entire length of the wall of cliffs, but are nowhere more than six feet above the water of the lake. They probably represent highly interesting events in the career of the people whose artist-historians placed them there.—*Youth's Companion.*

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